

# Installation and service instructions

for contractors

# VIESMANN

**Vitotronic 300-K**

**Type MW1B**

Weather-compensated cascade control unit

**Vitotronic 100**

**Type GC1B and GC4B**

Boiler control unit

*For applicability, see the last page*

## **VITOTRONIC 300-K**

## **VITOTRONIC 100**



Vitotronic 100, GC1B



Vitotronic 100, GC4B



Vitotronic 300-K

## Safety instructions



Please follow these safety instructions closely to prevent accidents and material losses.

### Safety instructions explained



#### **Danger**

This symbol warns against the risk of injury.



#### **Please note**

This symbol warns against the risk of material losses and environmental pollution.

### **Note**

*Details identified by the word "Note" contain additional information.*

### **Target group**

These instructions are exclusively intended for qualified contractors.

- Work on gas installations must only be carried out by a registered gas fitter.
- Work on electrical equipment must only be carried out by a qualified electrician.
- The system must be commissioned by the system installer or a qualified person authorised by the installer.

### **Regulations**

Observe the following when working on this system:

- Statutory regulations regarding the prevention of accidents
- Statutory regulations regarding environmental protection

- The Code of Practice of relevant trade associations
- All current safety regulations as defined by DIN, EN, DVGW, TRGI, TRF, VDE and all locally applicable standards
  - Ⓐ ÖNORM, EN, ÖVGW-TR Gas, ÖVGW-TRF and ÖVE
  - ⒸH SEV, SUVA, SVGW, SVTI, SWKI, VKF and EKAS guideline 1942: LPG, part 2

### **If you smell gas**



#### **Danger**

Escaping gas can lead to explosions which may result in serious injury.

- Do not smoke. Prevent naked flames and sparks. Do not switch lights or electrical appliances on or off.
- Close the gas shut-off valve.
- Open windows and doors.
- Evacuate any people from the danger zone.
- Notify your gas or electricity supplier and your local heating contractor from outside the building.
- Shut off the electricity supply to the building from a safe place (outside the building).

## Safety instructions (cont.)

### If you smell flue gas



#### **Danger**

Flue gas can lead to life threatening poisoning.

- Shut down the heating system.
- Ventilate the installation site.
- Close all doors in the living space.

### Flue systems and combustion air

Ensure that flue systems are clear and cannot be sealed, for instance due to accumulation of condensate or other causes. Ensure a sufficient supply of combustion air.

Instruct system users that subsequent modifications to the building characteristics are not permissible (e.g. cable/pipe-work routing, cladding or partitions).



#### **Danger**

Leaking or blocked flue systems, or an insufficient supply of combustion air can cause life threatening poisoning from carbon monoxide in the flue gas.

Ensure the flue system is in proper working order. Apertures for supplying combustion air must be non-closable.

### Extractors

Operating appliances that extract air to the outside (cooker hoods, extractors, air conditioning units, etc.) can create negative pressure. If the boiler is operated at the same time, this can lead to reverse flow of the flue gas.



#### **Danger**

The simultaneous operation of the boiler and appliances that extract air to the outside can result in life threatening poisoning due to reverse flow of the flue gas.

Fit an interlock circuit or take suitable steps to ensure a sufficient supply of combustion air.

### Working on the system

- Where gas is used as the fuel, close the main gas shut-off valve and safeguard it against unintentional reopening.
- Isolate the system from the power supply (e.g. by removing the separate fuse or by means of a mains isolator) and check that it is no longer 'live'.
- Safeguard the system against reconnection.



#### **Danger**

Hot surfaces can cause burns.

- Before maintenance or service work, switch OFF the appliance and let it cool down.
- Never touch hot surfaces on the boiler, burner, flue system or pipework.



#### **Please note**

Electronic assemblies can be damaged by electrostatic discharge.

Before beginning work, touch earthed objects, such as heating or water pipes, to discharge static loads.

## **Safety instructions** (cont.)

### **Repair work**



**Please note**

Repairing components that fulfil a safety function can compromise the safe operation of the system.

Faulty components must be replaced with original Viessmann spare parts.

### **Auxiliary components, spare and wearing parts**



**Please note**

Spare and wearing parts that have not been tested together with the system can compromise its function. Installing non-authorised components and making non-approved modifications or conversions can compromise safety and may invalidate the warranty.

For replacements, use only original spare parts supplied or approved by Viessmann.

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## Intended use

The appliance is only intended to be installed and operated in sealed unvented heating systems that comply with EN 12828, with due attention paid to the associated installation, service and operating instructions. It is only designed for the heating of water that is of potable water quality.

Intended usage presupposes that a fixed installation in conjunction with permissible, system-specific components has been carried out.

Commercial or industrial usage for a purpose other than heating the building or DHW does not comply with regulations.

Any usage beyond this must be approved by the manufacturer for the individual case.

Incorrect usage or operation of the appliance (e.g. the appliance being opened by the system user) is prohibited and results in an exclusion of liability. Incorrect usage also occurs if the components in the heating system are modified from their intended function (e.g. if the flue gas and ventilation air paths are sealed).

## Overview of electrical connections



### **Danger**

Incorrect wiring can lead to serious injury from electrical current and result in appliance damage.

- Route LV leads < 42 V and > 42 V/230 V~/400 V~ cables separately.

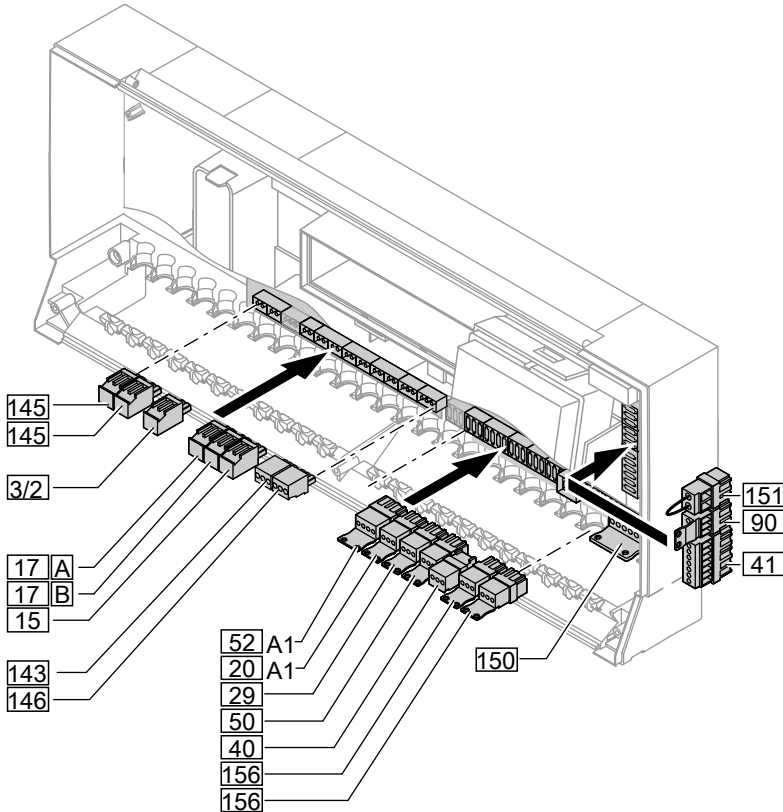
- Strip the insulation from the cables as close to the terminals as possible, and bundle tightly to the corresponding terminals.

- Secure cables with cable ties. This ensures that, should there be a fault, for example when detaching a wire, the wires cannot drift into the adjacent voltage area.

- Observe the requirements of safety category II when connecting external switching contacts or components to the safety LV of the control unit. That is 8.0 mm air and creep paths and 2.0 mm insulation thickness against 'live' components.
- Ensure the safe electrical separation of all on-site components (incl. PC/laptops) conforms to EN 60 335 or IEC 65.

## Overview of electrical connections (cont.)

### Vitotronic 100, type GC1B



#### PCB, low voltage

- 3 / 2 Boiler water temperature sensor
- 15 Flue gas temperature sensor (accessory)
- 17 A Therm-Control temperature sensor  
or  
Return temperature sensor T1 (accessory)
- 17 B Return temperature sensor T2 (accessory)
- 143 External connections

- 145 KM BUS subscriber (accessory)
- 146 External connections

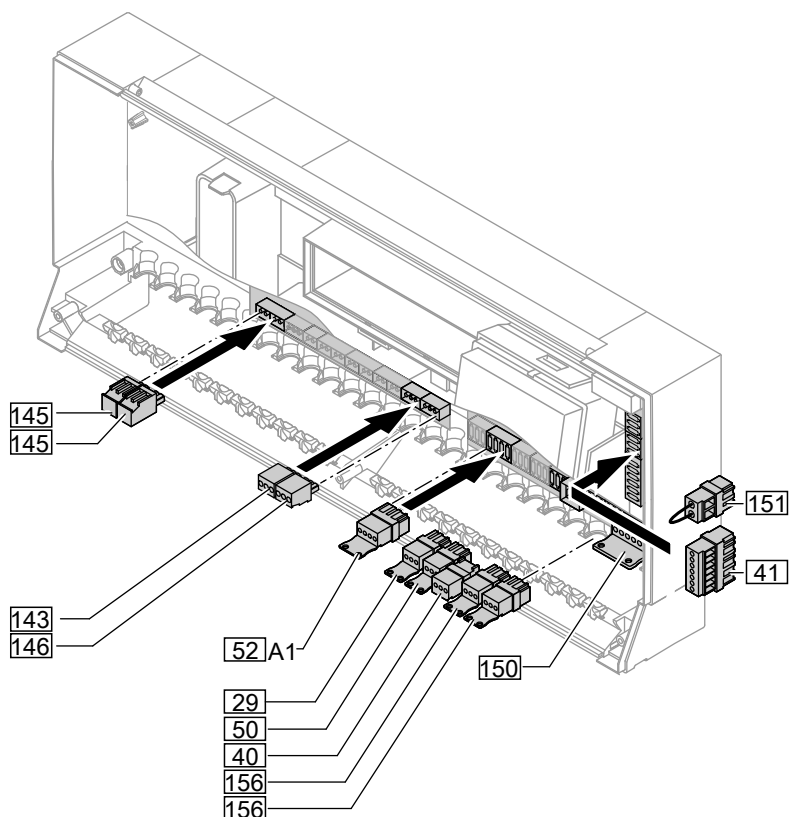
#### PCB 230 V~

- 20 A1 Circulation pump, flue gas/water heat exchanger  
or  
Switching output
- 29 Shunt pump or boiler circuit pump (on site)
- 40 Power supply
- 41 Burner stage 1

## Overview of electrical connections (cont.)

<b>50</b>	Central fault message	<b>90</b>	Burner stage 2/mod.
<b>52/A1</b>	Motorised butterfly valve or Motor for 3-way mixing valve for return temperature control	<b>150</b>	External connections, e.g. sup- plementary safety equipment
		<b>151</b>	Safety chain, potential-free
		<b>156</b>	Power supply for accessories

### Vitotronic 100, type GC4B



#### PCB, low voltage

<b>143</b>	External connections
<b>145</b>	KM BUS subscriber (accessory) and KM BUS burner control unit
<b>146</b>	External connections

#### PCB 230 V~

<b>29</b>	Boiler circuit pump (on site)
<b>40</b>	Power supply, from mains filter unit, 230 V/50 Hz
<b>41</b>	Burner
<b>50</b>	Central fault message

## Overview of electrical connections (cont.)

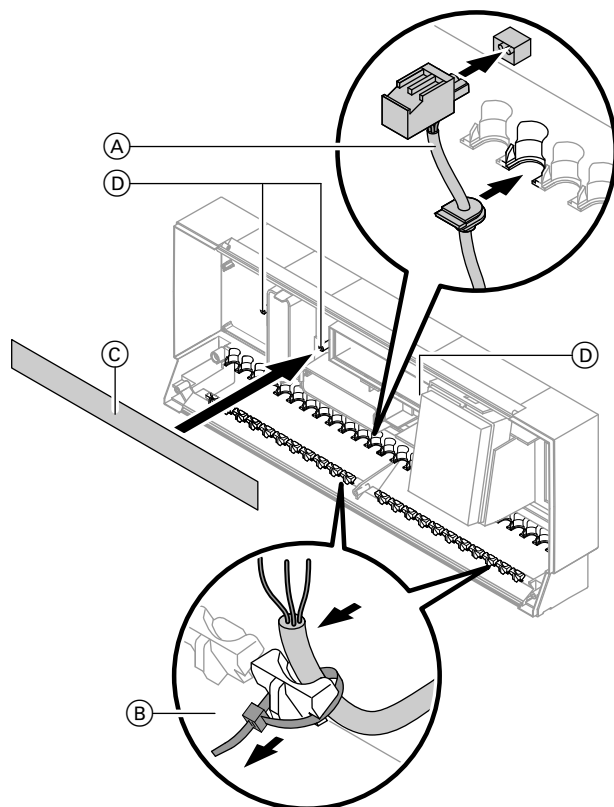
52A1 Motorised butterfly valve  
150 External connections, e.g. supplementary safety equipment

151 Safety chain, potential-free  
156 Power supply, from mains filter unit

## Inserting cables and applying strain relief

- Control unit fitted to the boiler:  
Route cables from below through the front panel of the boiler into the wiring chamber of the control unit.
- Control unit fitted on the side of the boiler:  
Route cables from below out of the cable trunking into the control unit.

## Inserting cables and applying strain relief (cont.)



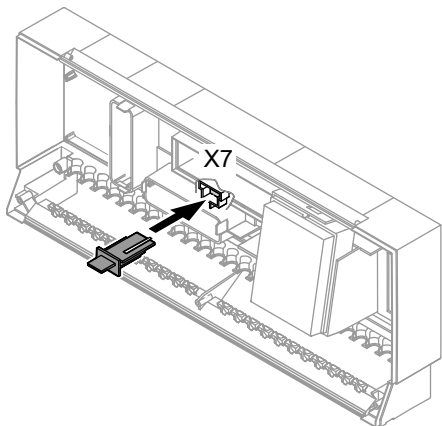
- (A) Cables with moulded strain relief
- (B) On-site cables; strip up to 100 mm of insulation.

- (C) Plug-in connection diagram
- (D) Female mouldings for plug-in connection diagram

## Inserting the boiler coding card

Only use the boiler coding card supplied with the boiler (see page 185).

## Inserting the boiler coding card (cont.)



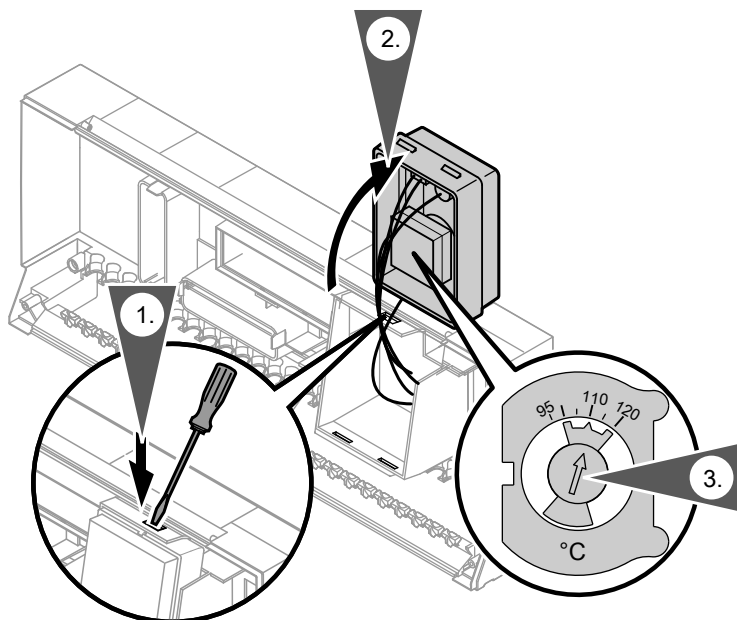
## Changing over the high limit safety cut-out

### Only Vitotronic 100, type GC1B

The high limit safety cut-out is supplied with a factory setting of 110 °C.

High limit safety cut-out	110 °C	100 °C	120 °C
Temperature controller	100 °C	87 °C	110 °C
Electronic maximum boiler water temperature limit, coding address "06" in group 2 " <b>Boiler</b> " on the Vitotronic 100	95 °C	85 °C	105 °C
Electronic maximum flow temperature limit, coding address "37" in the " <b>Cascade</b> " group on the Vitotronic 300-K	90 °C	80 °C	100 °C

## Changing over the high limit safety cut-out (cont.)



## Changing the temperature controller setting

### Only Vitotronic 100, type GC1B

The temperature controller is supplied with a factory setting of 95 °C.

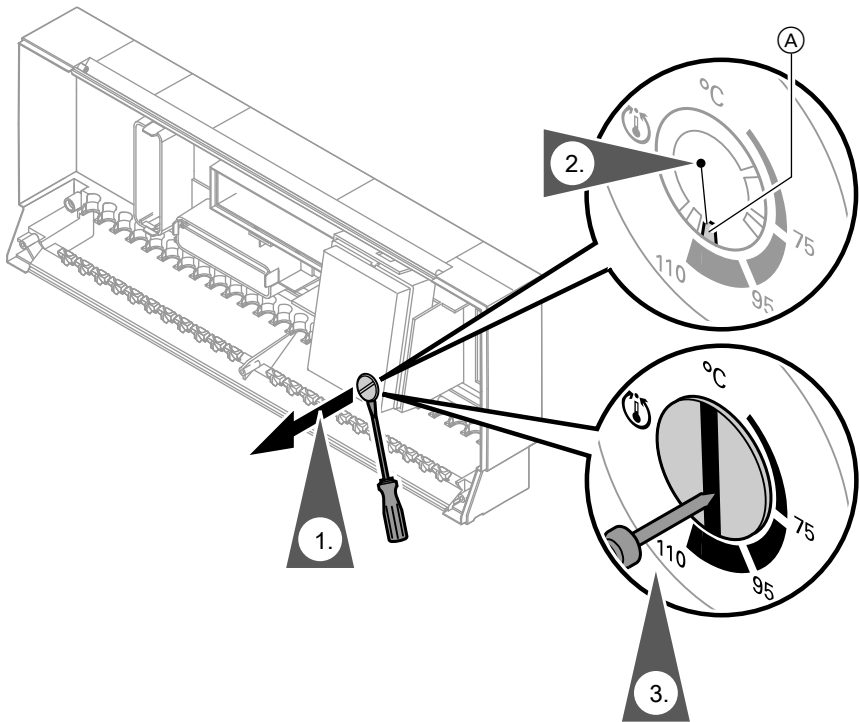


#### Please note

Excessive DHW temperatures can damage the DHW cylinder. If the system operates with a DHW cylinder, ensure that the maximum permissible DHW temperature is not exceeded. If necessary, install suitable safety equipment for this purpose.



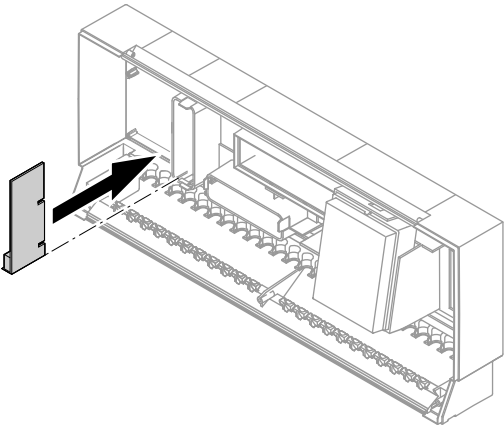
## Changing the temperature controller setting (cont.)



Ⓐ 75 to 100 °C

1. Remove rotary selector "Ⓐ".
2. Using a pair of pointed pliers, break tab Ⓐ identified in the illustration out of the stop dial.
3. Fit rotary selector "Ⓐ" so that the marking lies at the centre of the selected range. Turn rotary selector "Ⓐ" fully clockwise.

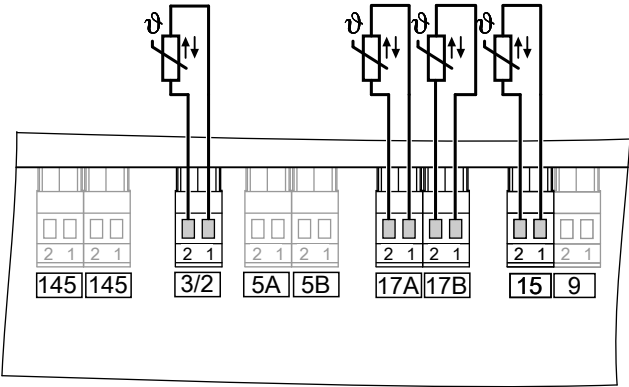
**Inserting the LON communication module**



Making the LON connection, see page 44.

**Connecting sensors**

**Vitotronic 100, type GC1B**



**PCB, low voltage**

- |   |
|---|
| 3 |
|---|

 Boiler water temperature sensor
- |   |
|---|
| 5 |
|---|

A
---

 Without function
- |   |
|---|
| 5 |
|---|

B
---

 Without function

- |   |
|---|
| 9 |
|---|

 Without function
- |    |
|----|
| 15 |
|----|

 Flue gas temperature sensor (accessory)

## Connecting sensors (cont.)

17 A Therm-Control temperature sensor  
or

Return temperature sensor T1  
(accessory)  
17 B Return temperature sensor T2  
(accessory)

## Vitotronic 100, type GC4B

### Note

No sensor connections are required.

## Connecting pumps

### Available connections

- 20 A1 Circulation pump, flue gas/water heat exchanger  
or  
Switching output
- 29 Shunt pump or boiler circuit pump

## Pumps 230 V~

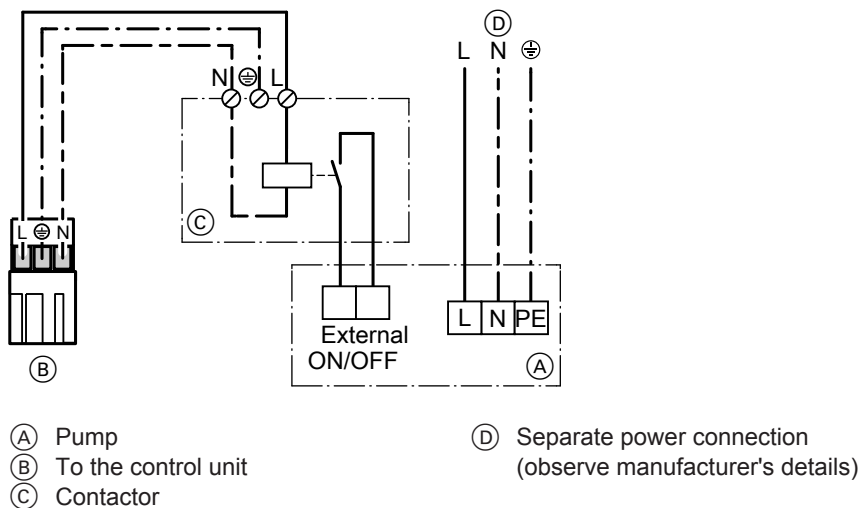


Rated current 4(2) A~  
Recommended  
connecting cable H05VV-F3G  
0.75 mm<sup>2</sup>  
or  
H05RN-F3G  
0.75 mm<sup>2</sup>

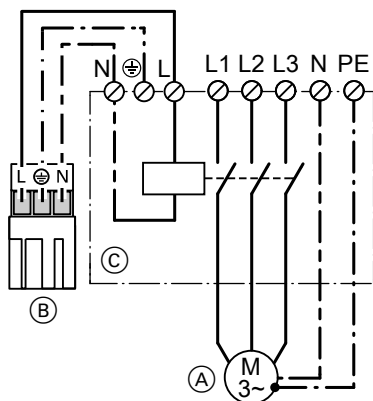
- A Pump
- B To the control unit

## Connecting pumps (cont.)

### Pumps with power consumption greater than 2 A



### Pumps 400 V~



#### For switching the contactor

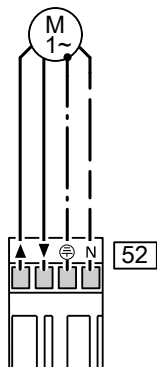
Rated current 4(2) A~  
 Recommended  
 connecting cable H05VV-F3G  
 0.75 mm<sup>2</sup>  
 or  
 H05RN-F3G  
 0.75 mm<sup>2</sup>

- (A) Pump
- (B) To the control unit
- (C) Contactor

## Connecting actuators

### Available connections

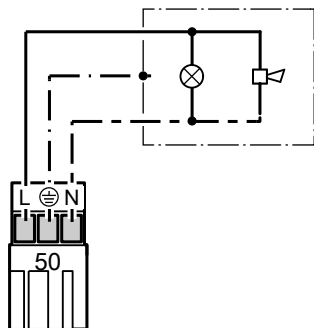
	Vitotronic 100, type GC1B	Vitotronic 100, type GC4B
52/A1	Motorised butterfly valve or Motor for 3-way mixing valve, return temperature control	Motorised butterfly valve



- ▲ Open  
▼ Close

Rated voltage	230 V~
Rated current	Max. 0.2 (0.1) A~
Recommended connecting cable	H05VV-F4G0.75 mm <sup>2</sup> or H05RN-F4G 0.75 mm <sup>2</sup>
Runtime	5 to 199 s, adjustable at coding address "40" in group 1 <b>"General"</b> .

### Connecting a central fault message facility



Rated voltage	230 V~
Rated current	Max. 4 (2) A~
Recommended connecting cable	H05VV-F3G 0.75 mm <sup>2</sup> or H05RN-F3G 0.75 mm <sup>2</sup>

#### Note

Only fault messages from this one Vitotronic 100 will be passed on. If faults from the entire system are to be passed on, use plug 50 of the Vitotronic 300-K.

## Connecting the external safety equipment

Connection via **plug 150**.

The plug-in adaptor for external safety equipment (accessory, see chapter "Components") can be used for connecting several pieces of safety equipment.

### Note

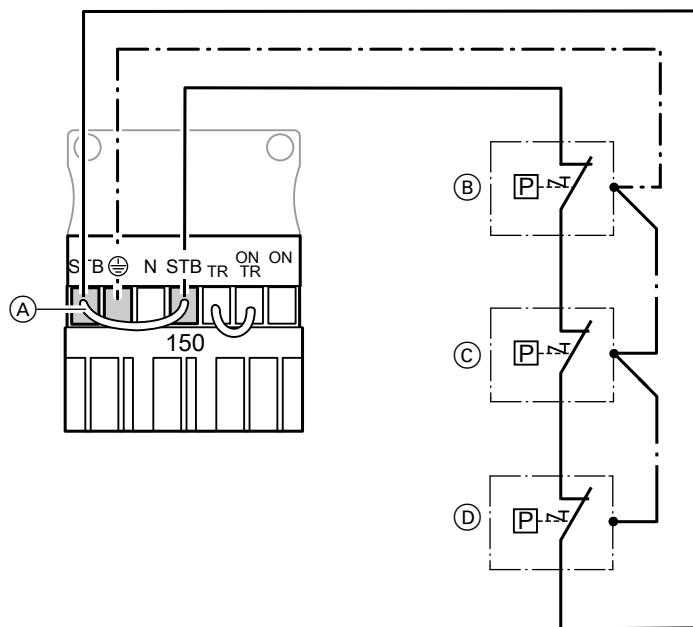
Plug **150** **must** remain plugged in, even if no connection is made.



### Please note

'Live' contacts lead to short circuits or phase failure.

The external connections must be **potential-free**.



(A) Jumper "STB" – "STB"

(B) Low water indicator, minimum pressure limiter

(C) Maximum pressure limiter

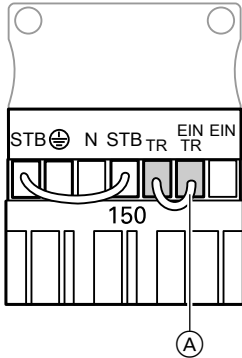
(D) Further safety equipment

1. Remove jumper "STB" – "STB".

2. Connect the external safety equipment in series to plug **150**.

## Provisional burner operation

Connection at plug **150**.



Ⓐ Jumper "TR" – "ON/TR"

Insert jumper "TR" – " burner control unit ON/TR" across "TR" – "ON".

The boiler heats up with burner stage 1 or with the lower heating output/base load.

- Shutdown for type GC1B via the temperature controller
- Shutdown for type GC4B via the temperature limiter in the burner control unit

## External burner blocking

### Only Vitotronic 100, type GC1B

Connection on plug **150**.

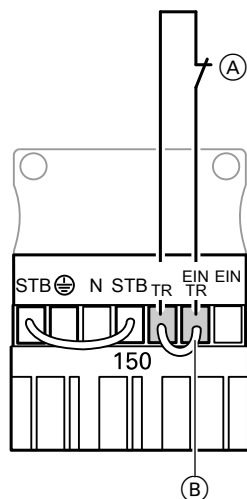


#### Please note

'Live' contacts lead to short circuits or phase failure.

The external connection **must be potential-free**.

## External burner blocking (cont.)



Remove jumper "TR" – "ON/TR".

### Note

Connect **only** safety shutdown equipment, e.g. temperature limiter, to these terminals.

Opening this contact leads to a controlled burner shutdown.

- (A) Floating contact
- (B) Jumper "TR" – "ON/TR"



### Please note

The heating system has **no frost protection** while it is blocked. The boiler is not held at the lower boiler water temperature.

## External changeover of multi stage/modulating burners

### Only Vitotronic 100, type GC1B

Connection at plug 146.

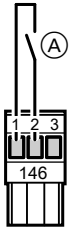


### Please note

'Live' contacts lead to short circuits or phase failure. The external connection **must be potential-free**.



## External changeover of multi stage/modulating... (cont.)



- (A) External changeover  
(floating contact)

Contact open: Modulating operation  
Contact closed: Two-stage operation

### Code

Set code "02:2" in group 2.

### Note

*When scanning the burner version, the address for modulation appears even after an external changeover (no rewriting).*

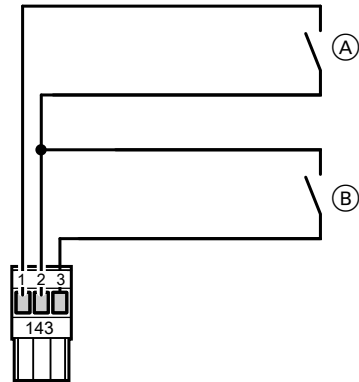
## Blocking the boiler externally/starting in the boiler sequence

Connection at plug **143**.



### Please note

'Live' contacts lead to short circuits or phase failure.  
The external connection **must be potential-free**.



- (A) Blocking the boiler externally  
(floating contact for switching LV)
- (B) Starting the boiler externally as the last one in the boiler sequence  
(floating contact for switching LV)

**Blocking the boiler externally/starting in the... (cont.)**

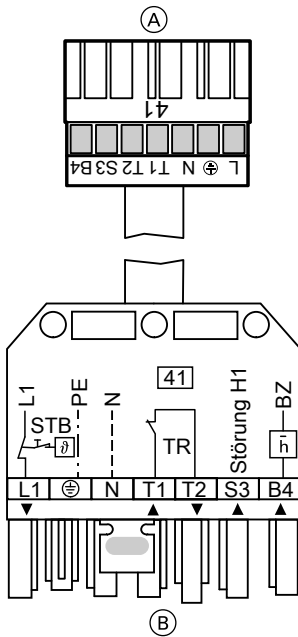
Contact	Closed	Open
(A)	<ul style="list-style-type: none"><li>■ The boiler is blocked and has been removed from the boiler sequence.</li><li>■ <b>Type GC1B:</b> The motorised butterfly valve or the 3-way mixing valve for constant return temperature control are closed. Shunt pump or boiler circuit pump are switched off.</li><li>■ <b>Type GC4B:</b> The motorised butterfly valve closes and the boiler circuit pump stops.</li><li>■ The other boilers provide the required heating.</li></ul> <p><b>!</b>      <b>Please note</b> If all boilers are blocked or there is no other boiler ready for operation, then there will be <b>no</b> frost protection for the heating system.</p>	The boiler is made part of the current boiler sequence.
(B)	This boiler starts if the other boilers in the heating system cannot provide sufficient heat.	The boiler is made part of the current boiler sequence.

**Connecting the AC burner, type GC1B**

**Pressure-jet oil/gas burners**

The burner cables are part of the standard boiler delivery.      Max. power consumption 6 (3) A.  
Connect the burner in accordance with  
**DIN 4791** [or local regulations].

## Connecting the AC burner, type GC1B (cont.)



(A) To the control unit

(B) To the burner

### Burner without plug

Fit the mating plug from Viessmann or from the burner manufacturer. Connect the burner cable.

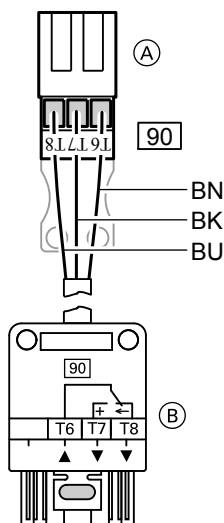
#### Terminal codes

- L1 Phase via high limit safety cut-out to the burner
- PE Earth conductor to burner
- N Neutral conductor to burner
- T1, T2 Control chain
- S3 Burner fault terminal
- B4 Hours run meter terminal
- ▼ Signal pass direction:  
Control unit → burner
- ▲ Signal pass direction:  
Burner → control unit

#### Equipment codes

- STB Control unit high limit safety cut-out
- TR Control unit temperature controller
- H1 Burner fault signal
- BZ Hours run meter

## Connecting the AC burner, type GC1B (cont.)



- (A) To the control unit  
(B) To the burner

### Terminal codes

T6, T8 Control chain burner stage 2 ON  
or modulation controller Open

T6, T7 Control chain burner stage 2  
OFF or modulation controller  
Close

▼ Signal pass direction:

Control unit → burner

▲ Signal pass direction:

Burner → control unit

### Colour coding to DIN/IEC 60757

BK Black

BN Brown

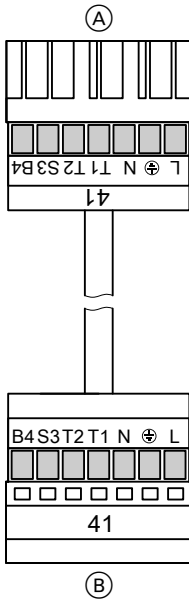
BU Blue

## Viessmann MatriX burner for Vitocrossal

The burner cables are part of the standard boiler delivery.

Max. power consumption 6 (3) A.

## Connecting the AC burner, type GC1B (cont.)

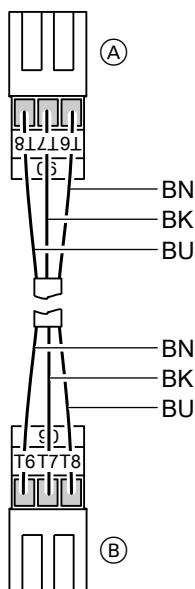


- (A) To the control unit  
(B) To the burner

### Terminal codes

- L1 Phase via high limit safety cut-out to the burner  
PE Earth conductor to burner  
N Neutral conductor to burner  
T1, T2 Control chain  
S3 Burner fault terminal  
B4 Hours run meter terminal  
▼ Signal pass direction:  
Control unit → burner  
▲ Signal pass direction:  
Burner → control unit

## Connecting the AC burner, type GC1B (cont.)



### Terminal codes

T6, T8 Control chain burner stage 2 ON  
or modulation controller Open  
T6, T7 Control chain burner stage 2  
OFF or modulation controller  
Close

### Colour coding to DIN/IEC 60757

BK Black  
BN Brown  
BU Blue

- (A) To the control unit  
(B) To the burner

## Connecting the three-phase burner, type GC1B

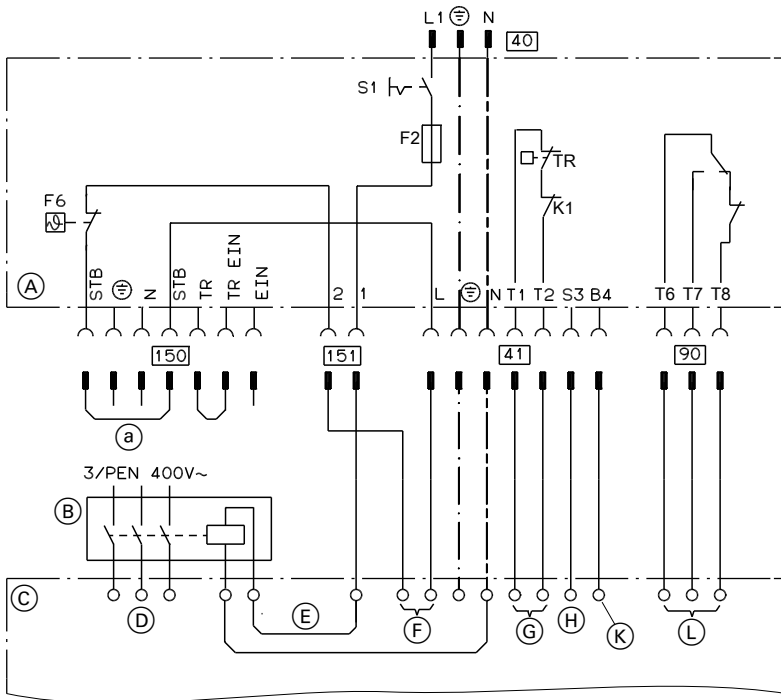
### Safety chain, potential-free

#### Note

*If there is a jumper from the external conductor to the control voltage in the burner, it may have to be removed.*

**Always observe the burner manufacturer's details.**

## Connecting the three-phase burner, type GC1B (cont.)



- |     |  |     |   |
|-----|--|-----|---|
| (A) | Control unit   | (L) | Base load/full load   |
| (B) | Main contactor (on site)                                 | 40  | Control unit power supply                                   |
| (C) | Three-phase burner                                       | 41  | Burner, stage 1   |
| (D) | Burner power supply                                      | 90  | Burner, stage 2   |
| (E) | Main contactor switching                                 | 150 | Plug for external connections                               |
| (F) | Safety chain (high limit safety cut-out), potential-free | (a) | External safety equipment; remove jumper when connecting    |
| (G) | Control chain stage 1/base load                          | 151 | Safety chain, potential-free, remove jumper when connecting |
| (H) | Burner fault message                                     |     |   |
| (K) | Hours run meter stage 1                                  |     |   |

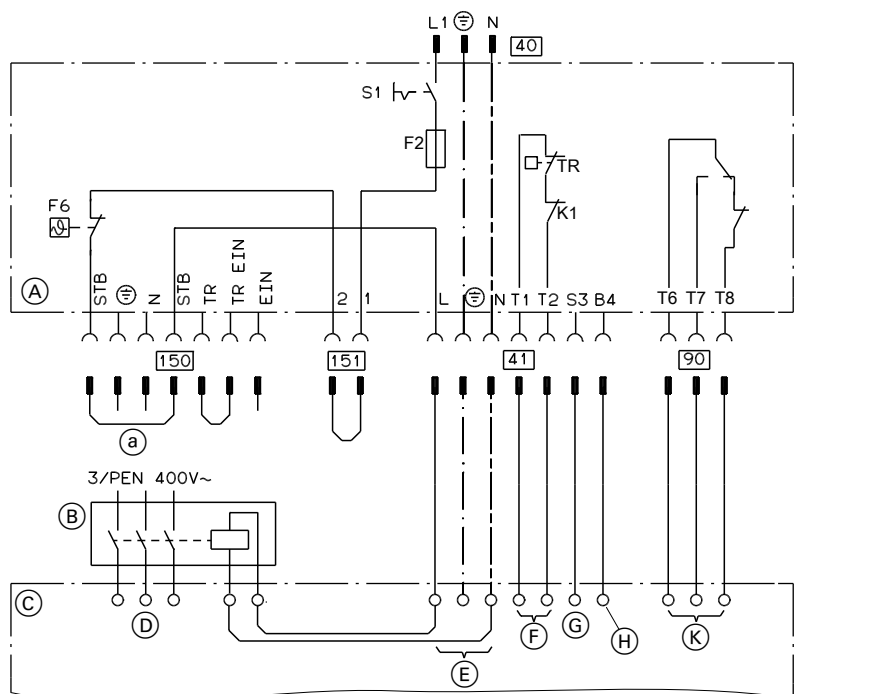
### Safety chain not potential-free

#### Note

If there is a jumper from the external conductor to the control voltage in the burner, it may have to be removed.

**Always observe the burner manufacturer's details.**

## Connecting the three-phase burner, type GC1B (cont.)



- |     |                                 |       |   |
|-----|---------------------------------|-------|---|
| (A) | Control unit                    | [40]  | Control unit power supply                                   |
| (B) | Main contactor (on site)        | [41]  | Burner, stage 1   |
| (C) | Three-phase burner              | [90]  | Burner, stage 2   |
| (D) | Burner power supply             | [150] | Plug for external connections                               |
| (E) | Main contactor switching        | (a)   | External safety equipment;<br>remove jumper when connecting |
| (F) | Control chain stage 1/base load | [151] | Safety chain (STB)  |
| (G) | Burner fault message            |       |   |
| (H) | Hours run meter stage 1         |       |   |
| (K) | Base load/full load             |       |   |



## Overview of electrical connections

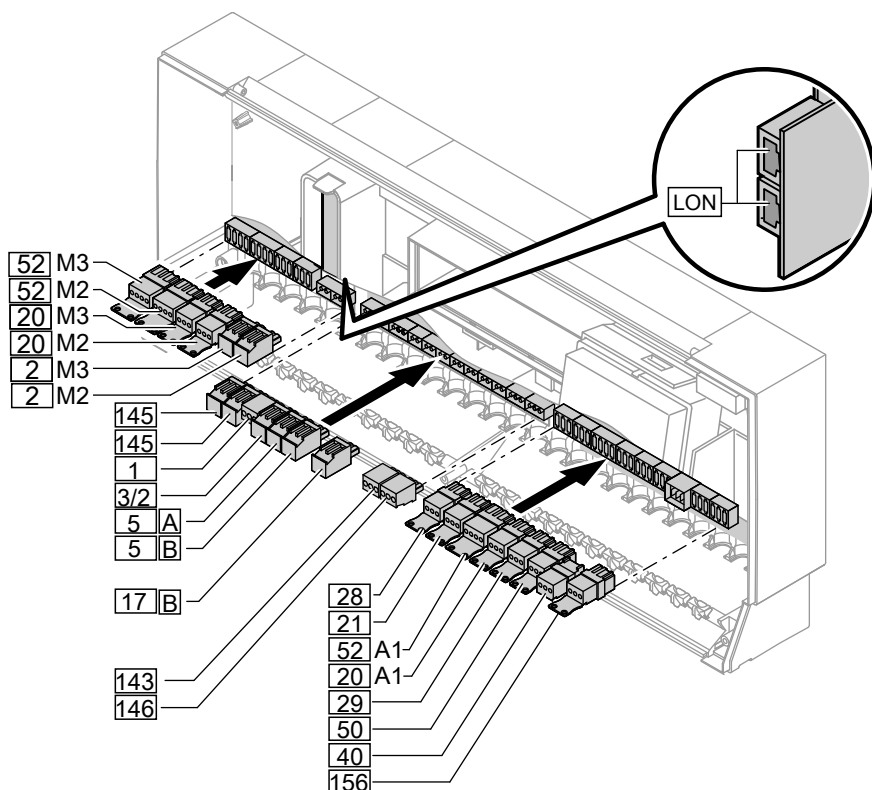


### Danger

Incorrect wiring can lead to serious injury from electrical current and result in appliance damage.

- Route LV leads < 42 V and > 42 V/230 V~/400 V~ cables separately.
- Strip the insulation from the cables as close to the terminals as possible, and bundle tightly to the corresponding terminals.
- Secure cables with cable ties. This ensures that, should there be a fault, for example when detaching a wire, the wires cannot drift into the adjacent voltage area.
- Observe the requirements of safety category II when connecting external switching contacts or components to the safety LV of the control unit. That is 8.0 mm air and creep paths and 2.0 mm insulation thickness against 'live' components.
- Ensure the safe electrical separation of all on-site components (incl. PC/laptops) conforms to EN 60 335 or IEC 65.

## Overview of electrical connections (cont.)



### Extension for heating circuits 2 and 3 with mixer

- 2** M2/M3 Flow temperature sensor
- 20** M2/M3 Heating circuit pump
- 52** M2/M3 Mixer motor

### PCB, low voltage

- 1** Outside temperature sensor
- 3** / **2** Flow temperature sensor, common heating flow
- 5** **A** Cylinder temperature sensor
- 5** **B** Cylinder temperature sensor 2 for cylinder loading system (accessory)

- 17** **B** Temperature sensor, cylinder loading system (accessory)
- 143** External connections
- 145** KM BUS subscriber (accessory)
- 146** External connections
- LON** LON BUS, connecting cable for data exchange with the Vitotronic 100, Vitotronic 200-H, Vitocom and Vitogate

## Overview of electrical connections (cont.)

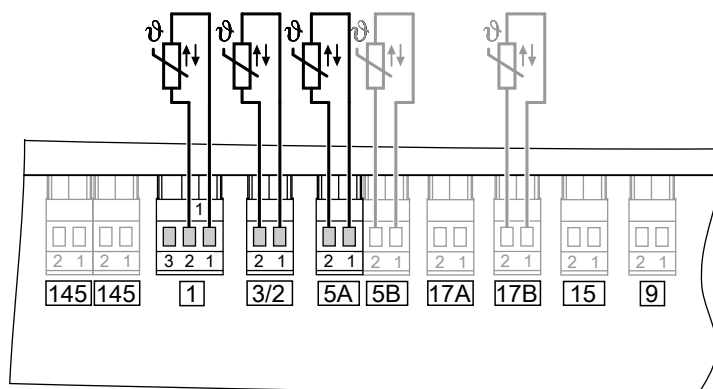
### PCB 230 V~

20	A1 Heating circuit pump or Primary pump, cylinder loading system	28	DHW circulation pump (on site)
		29	Distribution pump (on site)
		40	Power supply
		50	Central fault message
21	Circulation pump for cylinder heating (accessory)	52	A1 Motor for 3-way mixing valve, cyl- inder loading system
		156	Power supply for accessories

## Inserting cables and applying strain relief

See page 13.

## Connecting sensors



1	Outside temperature sensor	9	Without function
3	Flow temperature sensor, com- mon heating flow	15	Without function
5	Cylinder temperature sensor 1	17	Without function
5	Cylinder temperature sensor 2 for cylinder loading system (accessory)	17	Temperature sensor, cylinder loading system (accessory)
		A	
		B	

## Connecting sensors (cont.)

### Fitting location for outside temperature sensor

- North or north-westerly wall, 2 to 2.5 m above ground level; in multi storey buildings, in the upper half of the second floor.
- Not above windows, doors or ventilation outlets.
- Not immediately below balconies or gutters.
- Never render over.

### Outside temperature sensor connection

2-core lead, up to 35 m long with a cross-section of 1.5 mm<sup>2</sup>

### Wireless outside temperature sensor

Wireless subscriber. Only in connection with the wireless base station (KM BUS subscriber) that is connected to the Vitotronic control unit.



Wireless base station installation and service instructions

## Connecting pumps

### Available connections

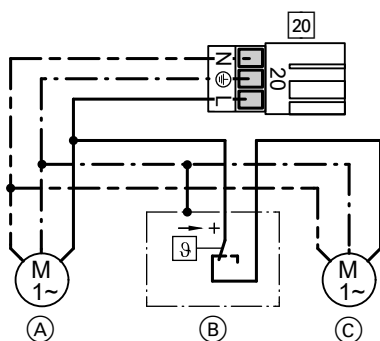
- |   |   |
|---|---|
| <div>20</div> Heating circuit pump<br>or<br>Primary pump, cylinder loading system | <div>28</div> DHW circulation pump<br><div>29</div> Shunt pump or distribution pump |
| <div>21</div> Circulation pump for cylinder heating                               |   |

### Pumps 230 V~ and 400 V~

Connection, see page 19.

## Connecting pumps (cont.)

### Pumps in the underfloor heating circuit



- 20 Control unit  
 (A) Primary pump

- (B) Temperature limiter  
 (C) Secondary pump  
 (downstream of the system separation)

Joint power consumption of both pumps:  
 max. **2 A**

## Connecting actuators

### Available connections

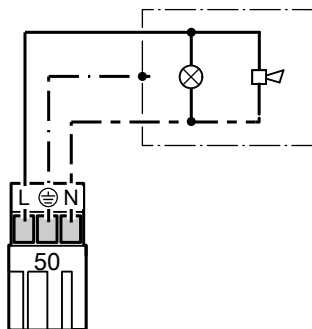
- 52A1 Motor for 3-way mixing valve, cylinder loading system  
 52M2/M3 Mixer motor  
 Connection, see page 21.

Rated voltage 230 V~  
 Rated current Max. 0.2 (0.1) A~  
 Recommended H05VV-  
 connecting cable F4G0.75 mm<sup>2</sup>  
 or  
 H05RN-F4G  
 0.75 mm<sup>2</sup>

The runtime can be adjusted via the following coding addresses:

- in conjunction with plug 52A1:
  - "40" in the **"General"** group
  - "6A" in the **"DHW"** group
- in conjunction with plug 52M2/M3:
  - "C3" in the **"Heating circuit"** group

## Connecting a central fault message facility



Rated voltage	230 V~
Rated current	Max. 4 (2) A~
Recommended connecting cable	H05VV-F3G 0.75 mm <sup>2</sup> or H05RN-F3G 0.75 mm <sup>2</sup>

### Note

*All heating system faults are passed on.  
This includes boiler control unit faults, for example.*

## External demand via switching contact

Connection options:

- Plug 146
- EA1 extension (accessory, see page 196)

With the contact closed, the boiler burners are started subject to load. They heat to the set flow temperature selected in **coding address "9b"** in the **"General"** group. The temperature is limited by this set value and the electronic maximum flow temperature limit (coding address "37" in the **"Cascade"** group).

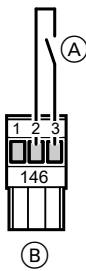
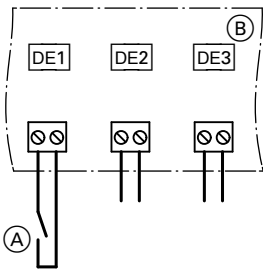
## Connection



### Please note

'Live' contacts lead to short circuits or phase failure.  
The external connection **must be potential-free**.

## External demand via switching contact (cont.)

Plug 146	EA1 extension
 <p>(A) Floating contact (B) Plug 146 of the control unit</p>	 <p>(A) Floating contact (B) EA1 extension</p>

## Codes

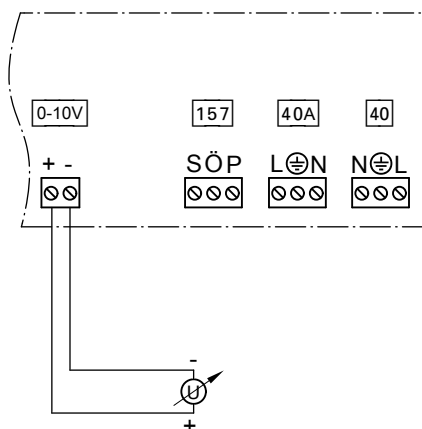
Plug 146	EA1 extension
No coding required.	Set "5d" (DE1), "5E" (DE2) or "5F" (DE3) in the <b>"General"</b> group to 2.

## External demand via 0 – 10 V input

Connection at input 0 – 10 V to EA1 extension (accessory, see page 196).

### Note

Ensure DC separation between the earth conductor and the negative pole of the on-site voltage source.



## External demand via 0 – 10 V input (cont.)

0 – 1 V  $\triangleq$  No default set flow temperature

1 V  $\triangleq$  Set value 10 °C

10 V  $\triangleq$  Set value 100 °C

Observe coding address "1E" in the **"General"** group.

## External blocking via switching contact

Connection options:

- Plug 143
- Extension EA1 (accessory, see page 196)

Closing this contact leads to a controlled burner shutdown on **each** boiler. Any connected shunt or distribution pump stops. Shut-off devices close.



### Please note

The heating system has **no frost protection** while it is blocked. The boilers are not held at the lower boiler water temperature.

## Connection

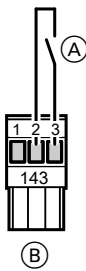
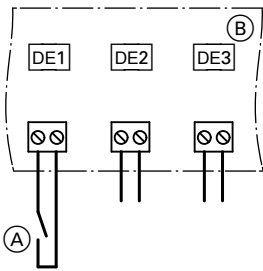


### Please note

'Live' contacts lead to short circuits or phase failure. The external connection **must be potential-free**.



## External blocking via switching contact (cont.)

Plug 143	EA1 extension
 <p>(A) Floating contact (B) Plug 143 of the control unit</p>	 <p>(A) Floating contact (B) EA1 extension</p>

## Codes

Plug 143	EA1 extension
In coding address "99" in the <b>"General"</b> group determine, what the input should influence.	Set "5d" (DE1), "5E" (DE2) or "5F" (DE3) in the <b>"General"</b> group to 3 or 4.

## External "Mixer close"/"Mixer open"

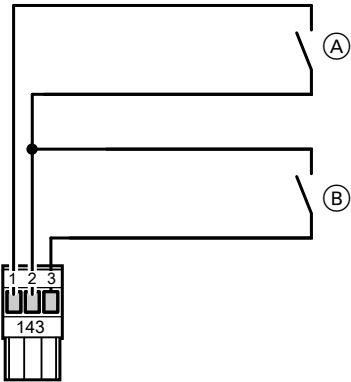
Connection at plug 143.



### Please note

'Live' contacts lead to short circuits or phase failure.  
The external connection **must be potential-free**.

## External "Mixer close"/"Mixer open" (cont.)



- (A) External "Mixer open"  
(floating contact)
- (B) External "Mixer close"  
(floating contact)

## Codes

External "Mixer open"	External "Mixer close"
In coding address "9A" in the <b>"General"</b> group, assign the function to the heating circuits.	In coding address "99" in the <b>"General"</b> group, assign the function to the heating circuits.

## External heating program changeover

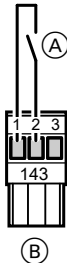
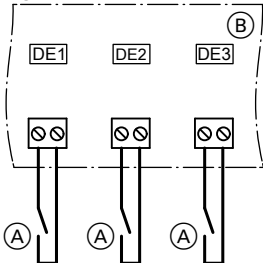
Optional connections:




- Plug 143
- Extension EA1 (accessory, see chapter "Components")

## Connection

- ! **Please note**  
'Live' contacts lead to short circuits or phase failure.  
The external connection **must be potential-free**.

## External heating program changeover (cont.)

Plug 143	Extension EA1
 <p>(A) Floating contact (B) Plug 143 on control unit</p>	<p>The changeover can be achieved <b>separately</b> for heating circuits 1 to 3.</p>  <p>(A) Floating contact (B) Extension EA1</p>

Preselected heating program (Contact open)	Code	Changed heating program (Contact closed)
 <div style="display: inline-block; width: 150px; height: 100px; border: 1px solid black; vertical-align: middle;"></div> Central heating OFF/ DHW OFF	"d5:0" in the <b>"Heating circuit ..."</b> group (Delivered condition)	Constant operation with reduced room temperature/DHW heating OFF
or  <div style="display: inline-block; width: 150px; height: 100px; border: 1px solid black; vertical-align: middle;"></div> Central heating OFF/ DHW heating ON	"d5:1" in the <b>"Heating circuit ..."</b> group	Constant operation with standard room temperature, DHW heating in accordance with coding ad- dress "64" in the <b>"DHW"</b> group
or  <div style="display: inline-block; width: 150px; height: 100px; border: 1px solid black; vertical-align: middle;"></div> Central heating ON/ DHW heating ON		

## External heating program changeover (cont.)

### Codes

Plug 143	Extension EA1
Via coding address "91" in the <b>"General"</b> group, the function can be assigned to the heating circuits.	Set "5d" (DE1), "5E" (DE2) or "5F" (DE3) in group <b>"General"</b> to 1. Via coding address "d8" in the <b>"Heating circuit..."</b> group, the function can be assigned to the heating circuits.

## Making the LON connection

The Viessmann LON system is designed for the "Line" BUS topology with a terminator at both ends (accessories). For further information, see the "Viessmann LON manual" at [www.viessmann.de/lon](http://www.viessmann.de/lon).

The transfer distances for LON are subject to the electrical properties of the respective cabling. For this reason, only use the stated cable types. Use only one type of cable within one LON.

Cable types (on site):

- 2-core cable, CAT 5, screened
- JY(St)Y 2 x 2 x 0.8 mm (telephone cable)

Observe the cabling requirements for the operation of the LON interface FTT 10-A (see [www.echelon.com](http://www.echelon.com)).

All Viessmann equipment is connected via RJ45 plugs. The Viessmann LON system always requires the cores "1" and "2" and the screen. The cores are interchangeable.

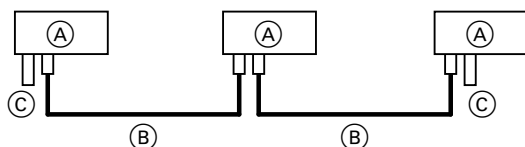
### Note

*When connecting appliances and routing cables, observe the requirements of safety category II, i.e. 8.0 mm air and creep path or 2.0 mm insulation thickness against live parts.*

*Ensure safe electrical separation for all on-site components (incl. PC/laptops) to ensure conformity to EN 60 335 and IEC 65.*

## Making the LON connection (cont.)

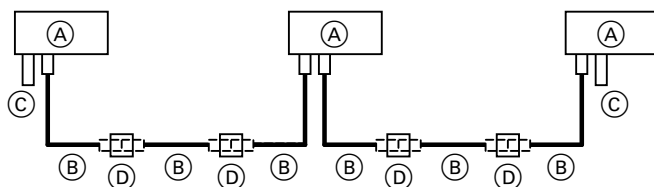
### Connection with Viessmann LON cable



Installation spacing  $\leq 7$  m

- (A) Control unit or Vitocom
- (B) LON cable, 7 m long
- (C) Terminator

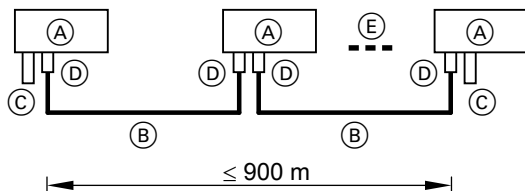
### Connection with Viessmann LON cable and coupling



Installation spacing 7 to 21 m

- (A) Control unit or Vitocom
  - (B) LON cable, 7 m long
  - (C) Terminator
  - (D) LON coupling
- Max. 3 cables between two appliances

### Connection with on-site cable and LON plug



Installation spacing  $\leq 900$  m (with LON plug)

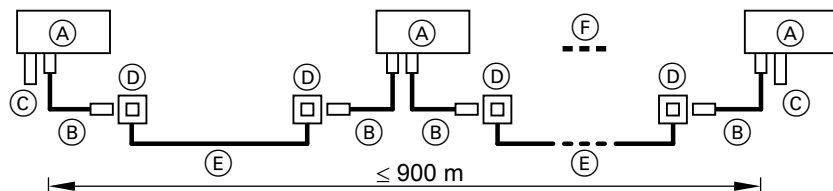
- (A) Control unit or Vitocom
- (B) On-site cable

## Making the LON connection (cont.)

- (C) Terminator
- (D) LON plug

- (E) Up to 30 subscribers

### Connection with LON cable, on-site cable and LON socket



Installation spacing ≤ 900 m (with LON sockets)

- (A) Control unit or Vitocom
- (B) LON cable, 7 m long
- (C) Terminator

- (D) LON sockets
- (E) On-site cable
- (F) Up to 30 subscribers

## Power supply

### Directives



#### Regulations

Connect the power supply and implement all safety measures (e.g. RCD circuit) in accordance with IEC 60364, the connection requirements of your local power supply utility, and VDE or national regulations.

Protect the power cable to the control unit with an appropriate fuse/MCB.

For oil and gas combustion equipment over 100 kW, according to the Sample Combustion Ordinance "FeuVO", an "emergency stop" must be installed on site outside the installation room. Observe the national combustion equipment ordinance for your region. For combustion equipment to EN 50156-1, the "emergency stop" installed on site must comply with the requirements of EN 50156-1.

Install the "emergency stop" outside the installation room; it must be able to separate **all** non-earthed conductors simultaneously with at least 3 mm contact separation.

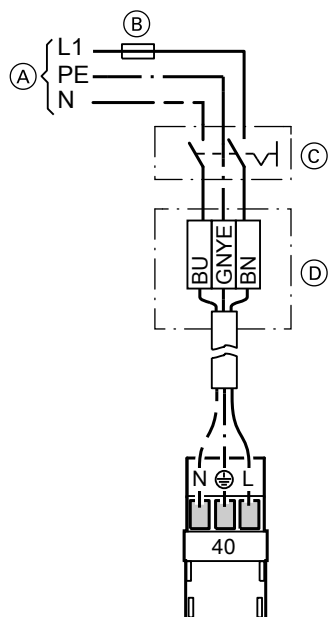
We additionally recommend installing an AC/DC-sensitive RCD (RCD class B  ) for DC (fault) currents that can occur with energy efficient equipment.

#### Recommended power cable

3-core cable selected from the following options:

- H05VV-F3G 1.5 mm<sup>2</sup>
- H05RN-F3G 1.5 mm<sup>2</sup>

## Power supply (cont.)



- Ⓐ Mains voltage 230 V~
- Ⓑ Fuse/MCB
- Ⓒ Mains isolator, 2-pole (on-site)
- Ⓓ Junction box (on-site)

1. Check whether the power cable to the control unit is protected in line with regulations.
2. Terminate the power cable in the terminal box and at plug 40 (on site).



### Danger

Incorrect wire assignment can result in serious injury and damage to the appliance.

Take care not to interchange wires "L1" and "N":

L1 BN (brown)

N BU (blue)

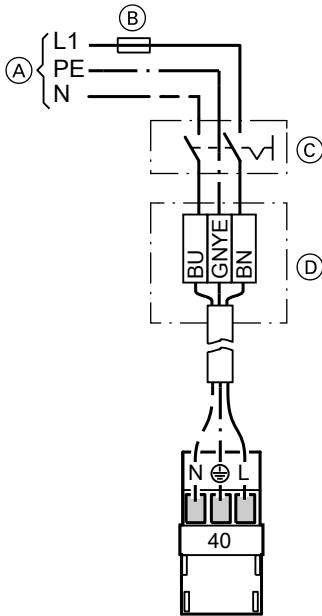
PE GNYE (green/yellow)

3. Insert plug 40 into the control unit.



## Power supply (cont.)

### Power supply of the Vitotronic 100 via a mains filter unit



- (A) Mains voltage 230 V~
- (B) Fuse/MCB
- (C) Mains isolator, 2-pole (on-site)
- (D) Junction box (on-site)

1. Check whether the power cable to the mains filter unit is protected in line with regulations.
2. Terminate the power cable in the terminal box and at plug 40 (on site).



#### **Danger**

Incorrect wire assignment can result in serious injury and damage to the appliance. Take care not to interchange wires "L1" and "N":

L1 Brown

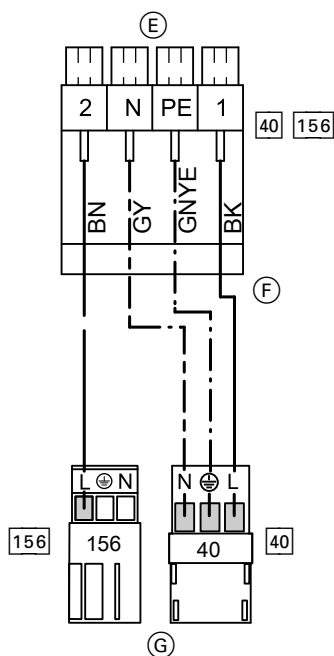
N Blue

PE Green/yellow

3. Insert plug 40 into the mains filter unit.



## Power supply (cont.)



4. Insert plug **40** and plug **156** of the mains filter unit connecting cable into the appropriate control unit socket.

- (E) To the mains filter unit
- (F) Mains filter unit connecting cable
- (G) To the control unit

Colour coding to DIN/IEC 60757

BN Brown

BK Black

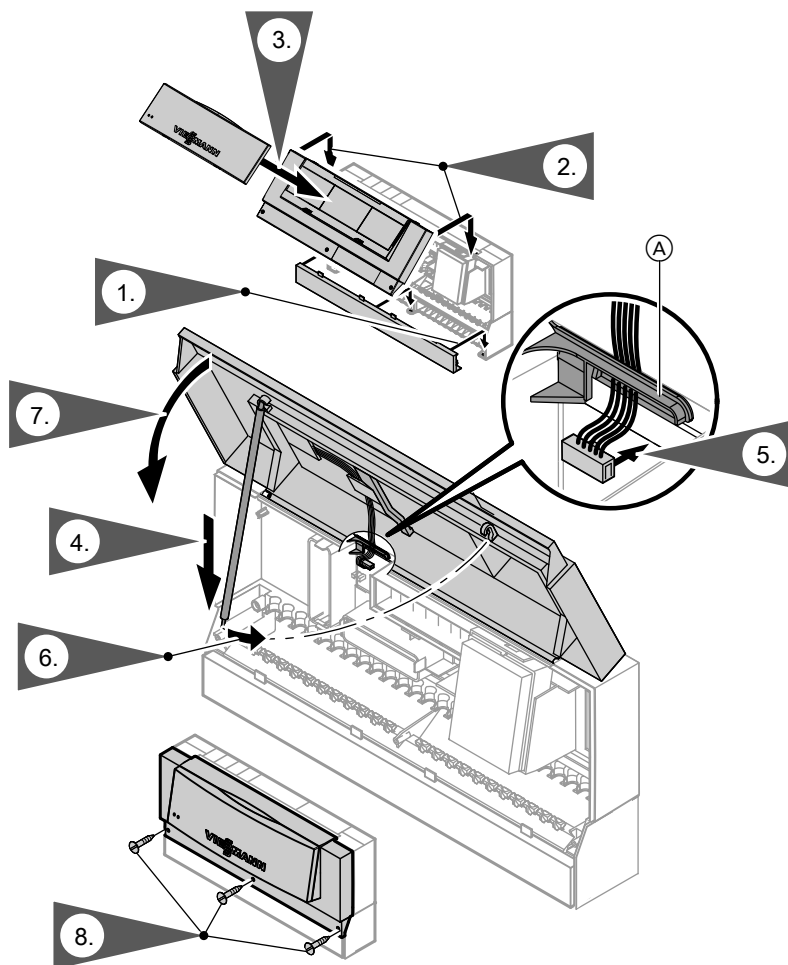
GY Grey

GNYE Green/yellow

## Fitting the control unit front

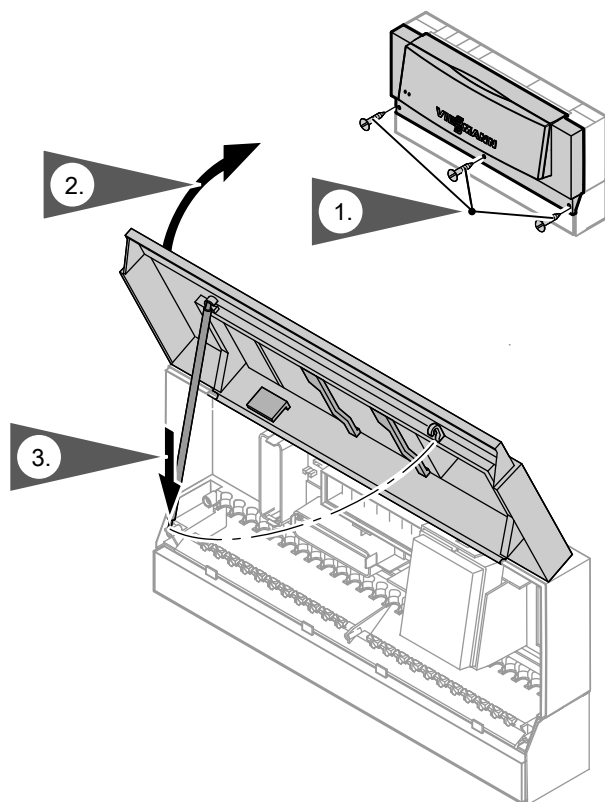
### Note

Step 1 applies only to the Vitotronic 300-K.



(A) Cable locking tab

## Opening the control unit



## Commissioning steps

Commissioning step	Vitotronic 100		Page	Vitotronic 300-K	
	Type GC1B	Type GC4B		Type MW1B	
Checking the high limit safety cut-out	X	—	53	—	—
Selecting the language	—	—	—	X	54
Setting the date and time	—	—	—	X	54
Matching the coding addresses to the system version	X	X	54	X	56
Selecting the boiler sequence	—	—	—	X	57
Connecting the control unit to the LON	X	X	58	X	58
Checking actuators and sensors	X	X	61	X	62
Setting the heating curve	—	—	—	X	64

## Testing the high limit safety cut-out

### Only Vitotronic 100, type GC1B

The minimum circulation volume should be 10 % of the circulation volume at rated load.

Reduce the heat consumption as far as possible.

1. Hold down the "TEST" key until the burner has shut down:  
Temperature controller is bridged.  
The high limit safety cut-out must shut down the burner at the latest when the safety temperature has been reached.

2. Release the "TEST" key.
3. Wait until the boiler water temperature has dropped approx. 15 to 20 K below the selected safety temperature.
4. Reset the high limit safety cut-out by pressing the reset button.



Operating instructions

## Selecting the language

### Only Vitotronic 300-K, type MW1B

At the commissioning stage, the display is in German (factory setting).

Sprache	
Deutsch	DE <input checked="" type="checkbox"/>
Bulgarski	BG <input type="checkbox"/>
Cesky	CZ <input type="checkbox"/>
Dansk	DK <input type="checkbox"/>
Wählen mit	
◀ ▶	

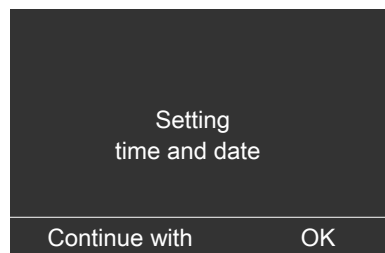
## Setting the date and time

### Only Vitotronic 300-K, type MW1B

The time and date need to be reset during commissioning or after a prolonged time out of use.



Operating instructions  
Vitotronic 300-K, type MW1B



## Matching up the coding addresses

### Vitotronic 100

Check all addresses in **Code 1** and adjust if required.

Check the following coding addresses and adjust accordingly in **Code 2**:

**Matching up the coding addresses (cont.)**

Code	Group	Function
"01"	2	Multi boiler system
"4d"	1	Plug <a href="#">29</a> function
"98"	1	Viessmann system number
"9C"	1	Monitoring LON subscribers
Only for the Vitotronic 100, type GC1B:		
"0C"	2	Return temperature control
"0d"	2	Therm-Control
"4C"	1	Plug <a href="#">20</a> function
"4E"	1	Plug <a href="#">52</a> function

**Matching the control unit to a two-stage burner****Only Vitotronic 100, type GC1B**

Address	Meaning	Setting
03:...	Fuel	Gas operation: 0 (delivered condition) Oil operation: 1 (irreversible)
08:...	Units and tens of the maximum burner output	Example: maximum burner output: 225 kW, set to <b>25</b> here.  <b>Note</b> <i>Values up to and including 199 kW can be entered directly.</i>
09:...	Hundreds of the maximum burner output	Example: maximum burner output: 225 kW, set to <b>2</b> here.
0A:...	Ratio of output burner stage 1 to maximum burner output in percent	Example: Output burner stage 1 135 kW maximum burner output: 225 kW (135 : 225) kW · 100 % = 60 %

## Matching up the coding addresses (cont.)

### Matching the control unit to a modulating burner

#### Only Vitotronic 100, type GC1B

##### Note

The burner must be fully adjusted. To achieve a wide modulating range, set the minimum output as low as possible (take the chimney and flue system into account).

Address	Meaning	Setting
03:...	Fuel	Gas operation: 0 (delivered condition) Oil operation: 1 (irreversible)
08:...	Units and tens of the maximum burner output	Example: maximum burner output: 225 kW, set to <b>25</b> here.  <b>Note</b> Values up to and including 199 kW can be entered directly.
09:...	Hundreds of the maximum burner output	Example: maximum burner output: 225 kW, set to <b>2</b> here.
15:...	Modulation range runtime	Determine the actuator runtime in seconds between base load and maximum burner output.
0A:...	Ratio of output base load to maximum burner output in percent	Example: Base load output 72 kW Maximum burner output: 225 kW $(72 : 225) \text{ kW} \cdot 100 \% = 32 \%$
05:...	Ratio of partial load at $\frac{1}{3}$ of the actuator runtime to maximum burner output in percent	Example: Partial output 171 kW Maximum burner output: 225 kW $(171 : 225) \text{ kW} \cdot 100 \% = 76 \%$

### Vitotronic 300-K

Check all addresses in **Code 1** and adjust if required.

Check the following coding addresses and adjust accordingly in **Code 2**:

Code	Group	Function
"39"	"Cascade"	Permanent lead boiler
"3A"	"Cascade"	Permanent last boiler



## Matching up the coding addresses (cont.)

Code	Group	Function
"4C"	"General"	Plug <span style="border: 1px solid black; padding: 0 2px;">20</span> function
"4d"	"General"	Plug <span style="border: 1px solid black; padding: 0 2px;">29</span> function
"4E"	"General"	Plug <span style="border: 1px solid black; padding: 0 2px;">52</span> function
"55"	"DHW"	Cylinder temperature control function
"7A"	"General"	Central control
"98"	"General"	Viessmann system number
"9C"	"General"	Monitoring LON subscribers


## Selecting the boiler sequence

### Only Vitotronic 300-K

Boiler sequence subject to the selected codes in the **"Cascade"** group and calculations by the control unit:

- "38" Changing the lead boiler and the boiler sequence
- "39" Permanent lead boiler
- "3A" Permanent last boiler
- "41" to "44" ECO thresholds

Extended menu:

1. 
2. **"Boiler sequence"**
3. Select the required boiler sequence.  
**OK** to confirm

- Every boiler can be blocked or enabled subject to outside temperature by means of the ECO threshold.
- The ECO threshold has no effect if a boiler is required to achieve the set flow temperature in the case of enabled boilers failing.
- At least the lead boiler remains in operation when all boilers in a system would otherwise be blocked via the ECO threshold.

## Connecting the control unit to the LON

- A LON communication module must be fitted into **every** Vitotronic 100 (see page 18).

**Note**

*The LON communication module is an integral part of the Vitotronic 300-K.*

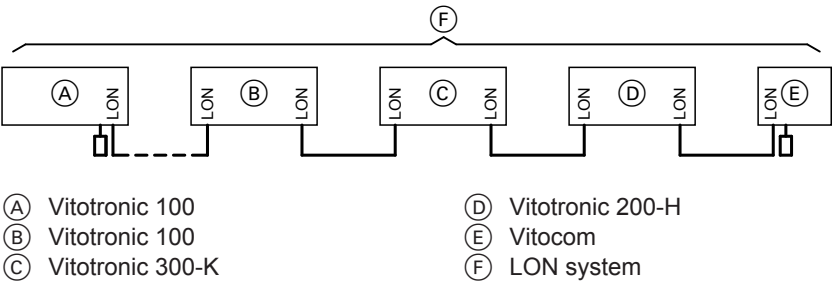
- Vitotronic 200-H:  
The LON communication module (accessory) must be fitted.



Installation and service instructions Vitotronic 200-H

- Within one LON, each subscriber number must **only** allocated once.
- Within a single LON, the system number (coding address "98" in the "**General**" group) must always be the same.
- **Only one Vitotronic** may be programmed as fault manager.
- The data transfer via LON can take several minutes.

## Example of a multi boiler system



(A)	(B)	(C)	(D)	(E)
Multi boiler system <b>Set</b> code "01:2" in group 2	Multi boiler system <b>Set</b> code "01:2" in group 2	—	—	—
Boiler number 1 Code "07:1" in group 2	Boiler number 2 <b>Set</b> code "07:2" in group 2	—	—	—

## Connecting the control unit to the LON (cont.)

Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ
With LON communication module. Code "76:1" in group 1 recognised automatically	With LON communication module. Code "76:1" in group 1 recognised automatically	With LON communication module. Code "76:1" in the <b>"General"</b> group recognised automatically	With LON communication module. Code "76:1" in the <b>"General"</b> group recognised automatically	—
—	—	Number of connected boilers. <b>Set</b> codes "35:1" to "35:4" in the <b>"Cascade"</b> group	—	—
Subscriber no. 1. Code "77:1" in group 1	Subscriber no. 2. <b>Set</b> code "77:2" in group 1	Subscriber no. 5. Code "77:5" in the <b>"General"</b> group	Subscriber no. 10. Code "77:10" in the <b>"General"</b> group	Subscriber no. 99
Control unit is not fault manager. Code "79:0" in group 1	Control unit is not fault manager. Code "79:0" in group 1	Control unit is fault manager. Code "79:1" in the <b>"General"</b> group.	Control unit is not fault manager. Code "79:0" in the <b>"General"</b> group.	Device is fault manager
—	—	Control unit transmits the time. Code "7b:1" in the <b>"General"</b> group	The control unit receives the time. <b>Set</b> code "81:3" in the <b>"General"</b> group	Device receives the time

## Connecting the control unit to the LON (cont.)

Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ
—	—	Control unit transmits outside temperature. Code "97:2" in the <b>"General"</b> group	Control unit receives the outside temperature. <b>Set</b> code "97:1" in the <b>"General"</b> group	—
LON subscriber remote monitoring. Code "9C:20" in group 1	LON subscriber remote monitoring. Code "9C:20" in group 1	LON subscriber remote monitoring. Code "9C:20" in the <b>"General"</b> group	LON subscriber remote monitoring. Code "9C:20" in the <b>"General"</b> group	—

## Carrying out a LON subscriber check

The subscriber check is used to test communication with the system devices connected to the fault manager.

Preconditions:

- The control unit must be programmed as **fault manager** (code "79:1" in the **"General"** group).
- The LON subscriber number must be programmed in all control units.
- The LON subscriber list in the fault manager must be up to date.

Service menu:

1. Press **OK** and **≡** simultaneously for approx. 4 s.
2. **"Service functions"**
3. **"Subscriber check"**
4. Select subscriber (e.g. subscriber 10).
5. Start the subscriber check with **"OK"**.

- Successfully tested subscribers are identified with **"OK"**.
- Unsuccessfully tested subscribers are identified with **"Not OK"**.

### Note

To carry out a new subscriber check, create a new subscriber list: **"Delete list?"** (Subscriber list is being updated).

## Connecting the control unit to the LON (cont.)

### Note




- *Vitotronic 100:*  
During the subscriber check, the display for the relevant subscriber flashes for approx. 1 min.
- *Vitotronic 200-H:*  
During the subscriber check, the display for the relevant subscriber flashes the subscriber no. for approx. 1 min and displays "**Wink**".

## Checking actuators and sensors

### Vitotronic 100

#### Carrying out a relay test

Service menu:

1. Press **OK** and  simultaneously for approx. 4 s.  
 flashes on the display.
2. Press **▶** to select . **OK** to confirm

3. **▲/▼** for the required actuator (output), see the following table.

4. **OK** to confirm  
The display shows the number for the activated actuator and "**ON**".

### Note

*Before an actuator is selected, all actuators are switched to zero volt.*

The following relay outputs can be controlled subject to the system equipment level:

Display	Explanation
0	All actuators have been switched off.
	<b>Stepped burner:</b>
1	Burner ON or burner stage 1 ON
2	Burner stage 1 and 2 ON
	<b>Modulating burner:</b>
1	Modulation controller open
2	Modulation controller neutral
3	Modulation controller close
5	Actuator at output <span style="border: 1px solid black; padding: 0 2px;">20</span> on

## Checking actuators and sensors (cont.)

Display	Explanation
6	Actuator at output <span style="border: 1px solid black;">29</span> on
7	Actuator at output <span style="border: 1px solid black;">52</span> open
8	Actuator at output <span style="border: 1px solid black;">52</span> neutral
9	Actuator at output <span style="border: 1px solid black;">52</span> close
11	Central fault message at output <span style="border: 1px solid black;">50</span> on

### Note

Connected pumps start during burner operation.

## Checking sensors

Actual temperatures can be scanned in menu **i**.



Operating instructions

## Vitotronic 300-K

### Carrying out a relay test

Service menu:

1. Press **OK** and **≡** simultaneously for approx. 4 s.
2. **"Actuator test"**

### Note

Before an actuator is selected, all actuators are switched to zero volt.

The following relay outputs can be controlled subject to the system equipment level:

Display		Explanation
"All actuators"	OFF	All actuators have been switched off.
"Output 20"	ON	Actuator at output <span style="border: 1px solid black;">20</span> A1
"Output 52"	Open	Actuator at output <span style="border: 1px solid black;">52</span> A1
"Output 52"	Neutral	
"Output 52"	Close	
"Cylinder primary pump"	ON	Actuator at output <span style="border: 1px solid black;">20</span>
"DHW circ pump"	ON	Actuator at output <span style="border: 1px solid black;">21</span>
"Output 29"	ON	Actuator at output <span style="border: 1px solid black;">29</span>

## Checking actuators and sensors (cont.)

Display		Explanation
"Central fault mess."	ON	Central fault message at output <span style="border: 1px solid black; padding: 0 2px;">50</span>
"Heating circ pump HC2"	ON	Actuator at output <span style="border: 1px solid black; padding: 0 2px;">20</span> M2
"Mixer HC2"	Open	Actuator at output <span style="border: 1px solid black; padding: 0 2px;">52</span> M2
"Mixer HC2"	Close	
"Heating circ pump HC3"	ON	Actuator at output <span style="border: 1px solid black; padding: 0 2px;">20</span> M3
"Mixer HC3"	Open	Actuator at output <span style="border: 1px solid black; padding: 0 2px;">52</span> M3
"Mixer HC3"	Close	
"EA1 output 1"	ON	Contact "P - S" on plug <span style="border: 1px solid black; padding: 0 2px;">157</span> of extension EA1 closed.
"AM1 output 1"	ON	Actuator at output A1
"AM1 output 2"	ON	Actuator at output A2
"Solar circuit pump"	ON	Solar circuit pump at output <span style="border: 1px solid black; padding: 0 2px;">24</span> at solar control module type SM1
"Solar circ pmp min"	ON	Solar circuit pump at output <span style="border: 1px solid black; padding: 0 2px;">24</span> at solar control module type SM1 switched to minimum speed.
"Solar circ pmp max"	ON	Solar circuit pump at output <span style="border: 1px solid black; padding: 0 2px;">24</span> at solar control module type SM1 switched to maximum speed.
"SM1 output 22"	ON	Actuator at output <span style="border: 1px solid black; padding: 0 2px;">22</span> at solar control module type SM1

### Information regarding the mixer motor rotational direction

The flow temperature must rise when the mixer opens. If the temperature drops, either the motor is turning in the wrong direction or the mixer set is incorrectly fitted (observe the mixer installation instructions).

3. ▲/▼ for the required group (see overview on page 70)
4. ▲/▼ for the actual temperature of the required sensor

## Checking sensors

Service menu:

1. Press **OK** and **≡**: simultaneously for approx. 4 s.
2. **"Diagnosis"**

## Adjusting the heating curve

### Only Vitotronic 300-K

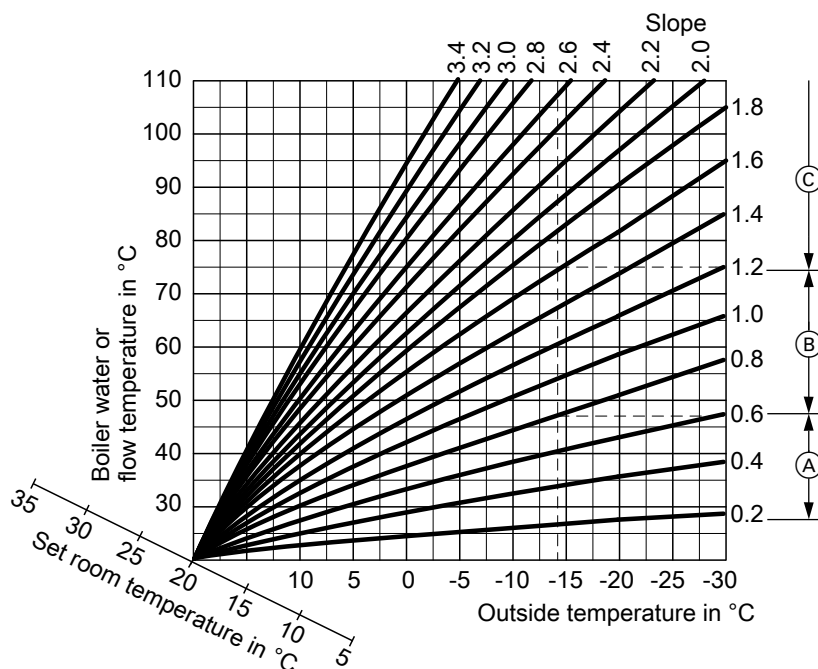
The heating curves represent the relationship between the outside temperature and the boiler water or flow temperature.

To put it simply, the lower the outside temperature, the higher the boiler water or flow temperature.

The boiler water or flow temperature in turn affects the room temperature.

Settings in the delivered condition:

- Slope = 1.4
- Level = 0



For outside temperature  $-14^{\circ}\text{C}$

- (A) Underfloor heating system  
Slope 0.2 to 0.8
- (B) Low temperature central heating  
Slope 0.8 to 1.6
- (C) Heating systems with boiler water  
temperature in excess of  $75^{\circ}\text{C}$   
Slope in excess of 1.6

### Selecting the set room temperature

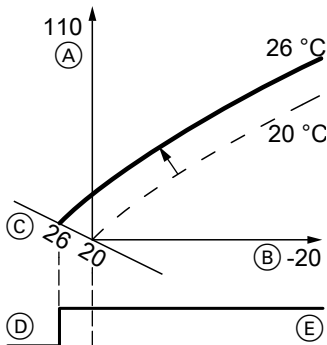
Individually adjustable for each heating circuit.



## Adjusting the heating curve (cont.)

The heating curve is offset along the set room temperature axis. With the heating circuit pump logic function enabled, the curve modifies the starting and stopping characteristics of the heating circuit pump.

### Standard set room temperature



Adjustment of the standard set room temperature from 20 to 26 °C

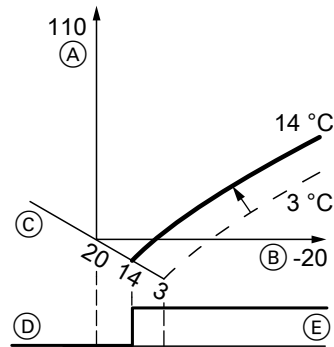
- (A) Boiler water temperature or flow temperature in °C
- (B) Outside temperature in °C
- (C) Set room temperature in °C
- (D) Heating circuit pump OFF
- (E) Heating circuit pump ON

Changing the standard set room temperature



Operating instructions

### Reduced set room temperature



Adjustment of the reduced set room temperature from 3 to 14 °C

- (A) Boiler water temperature or flow temperature in °C
- (B) Outside temperature in °C
- (C) Set room temperature in °C
- (D) Heating circuit pump OFF
- (E) Heating circuit pump ON

Changing the reduced set room temperature

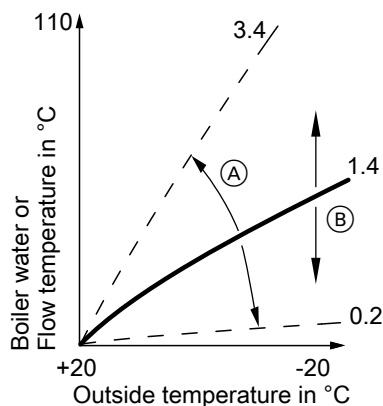


Operating instructions

### Changing the slope and level

Individually adjustable for each heating circuit.

## Adjusting the heating curve (cont.)



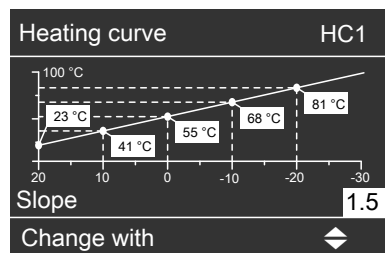
- (A) Changing the slope
- (B) Changing the level (vertical parallel offset of the heating curve)

Extended menu:

1. **≡**
2. **"Heating"**
3. Possibly **◀▶** for the required heating circuit
4. **"Heating curve"**
5. **"Slope"** or **"Level"**
6. Set values according to system requirements.


### Example:




Heating curve setting with slope 1.5:



## Calling up the service menu

Service menu:

1. Press **OK** and **≡**: simultaneously for approx. 4 s.  
 flashes on the display.
2. **▲/▼** for the required function (see the following table).

Symbol	Function
	Diagnosis
	Relay test
	Fault history
Code ①	Coding level 1
Code ②	Coding level 2

## Exiting the service menu

1. With **▶** select **SERV ⑦**.
2. **OK** to confirm; **"OFF"** flashes.
3. **OK** to confirm

### Note

*The system exits the service menu automatically after 30 min.*

## Scanning operating data


Operating data can be scanned in menu **i**.









Operating instructions

## Brief scan

Service menu:





1. Press **OK** and **≡**: simultaneously for approx. 4 s.  
 flashes on the display.
2. **OK** to confirm
3. **▲/▼** for the required function (see the following table).
4. **OK** to confirm

**Brief scan** (cont.)

Brief scan	Display				
					
0	—	System scheme (here 0)	Software version Control unit		Software version Program- ming unit
2	—	—	Maximum flue gas temperature; only for the Vitotronic 100, type GC1B		
3	—	—	Set boiler water temperature		
6	—	Number of KM BUS sub- scribers		Number of LON subscrib- ers	
7	SNVT con- figuration 0: Auto 1: Tool	Software version, commu- nication coprocessor		Software version, LON module	
8	—	Subnet address/system number		Node address	
9	—	Burner control unit/burner type 0: Single stage 1: Two-stage 2: Modulating		Device type	
b	—	Boiler coding card			
L	Burner: 0: OFF 1: Burner stage 1/ base load 2: Burner stage 2/full load	Motorised butterfly valve: 0: OFF 1: Preheat- ing 2: Control Close 3: Rules 4: Control Open 5: Open 6: Run-on	Output reduction in % 0: OFF		
E ①	—	Software version, burner control unit		—	
E ③				Software version Plug-in adaptor for exter- nal safety equipment	

## Service indicator

After the limits set at coding address "1F", "21", "23" in group 2 have been reached, the red fault indicator begins to flash and the display shows the following messages:

- The specified hours run and .
- The specified interval with  and .
- The specified maximum flue gas temperature and ; only for the Vitotronic 100, type GC1B.



## Acknowledging the service display

Press **OK** to acknowledge a service message.

### Note

*An acknowledged service message that was not reset reappears after 7 days.*

## After a service has been carried out (resetting service)

Reset code "24:1" in group 2 to "24:0".

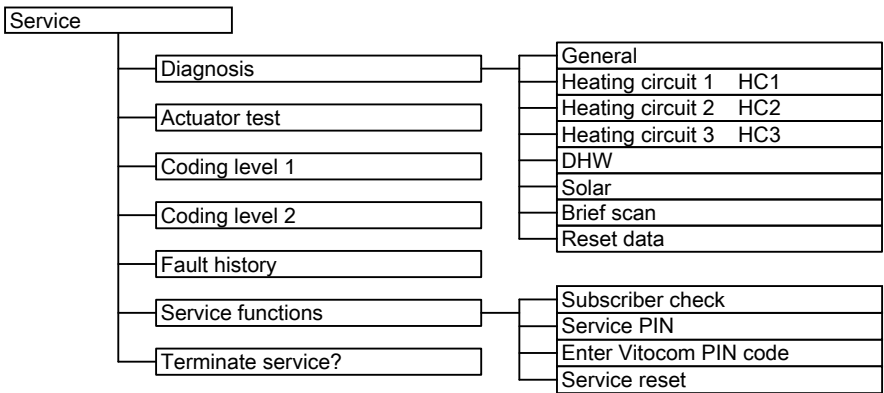
### Note

*The selected service parameters for hours run and interval restart at 0.*

Calling up the service menu

- Service menu:
1. Press **OK** and **≡**: simultaneously for approx. 4 s.
  2. **▲/▼** for the required menu (see the following diagram).

Service menu overview



"Coding level 2" is only displayed if this level has been enabled: Press **OK** and **↶** simultaneously for approx. 4 s.

Exiting the service menu

- Service menu:
1. **"Terminate service?"**
  2. **"Yes"**
- Note**  
*The system exits the service menu automatically after 30 min.*

Scanning operating data

Operating data can be scanned in six areas (see **"Diagnosis"** in the "Service" menu overview).

Operating data on heating circuits with mixers and a solar thermal system can only be scanned if the relevant components are installed in the system.

## Scanning operating data (cont.)

Service menu:

1. Press **OK** and **≡**: simultaneously for approx. 4 s.
2. **"Diagnosis"**
3. **▲/▼** for the required group, for example **"General"**.

### Note

*"- - -" appears on the display if a scanned sensor is faulty.*

For further information on operating data, see chapter "Brief scan".

## Resetting operating data

Saved operating data (e.g. hours run) can be reset to 0.

The value "Adjusted outside temp" is reset to the actual value.

### 3. "Reset data"

4. Select required operating data individually or select **"All details"**.

Service menu:


1. Press **OK** and **≡**: simultaneously for approx. 4 s.
2. **"Diagnosis"**

## Brief scan

Service menu:

1. Press **OK** and **≡**: simultaneously for approx. 4 s.
2. **"Diagnosis"**
3. **"Brief scan"**

The display shows 11 lines with 6 fields each.

Diagnosis brief scan						
1:	0	1	0	A	0	A
2:	0	0	0	A	0	1
3:	0	0	0	0	0	0
4:	0	0	0	0	0	0
Select with 						

**Brief scan** (cont.)

	1	2	3	4	5	6
1:	System schemes 01 to 10		Software version, control unit		Software version, programming unit	
2:	0	0	0		Device identification ZE-ID	
3:	0	0	Number of KM BUS subscribers		Software version Solar control module, type SM1	
4:	0	0	0	0	0	0
5:	0	0	0	0	Software version, extension AM1	Software version, extension EA1
6:	0	0	0	0	0	0
7:	Subnet address/system number		Node address		0	0
8:	SNVT config. 0: Auto 1: Tool	Software version Communic. coproc.	Software version Neuron Chip		Number of LON subscribers	
	<b>Heating circuit HC1</b>		<b>Heating circuit HC2</b>		<b>Heating circuit HC3</b>	
9:	Remote control 0: Without 1: Vitotrol 200A or Vitotrol 200 RF 2: Vitotrol 300A or Vitotrol 300 RF or Vitohome 300	Software version Remote control	Remote control 0: Without 1: Vitotrol 200A or Vitotrol 200 RF 2: Vitotrol 300A or Vitotrol 300 RF or Vitohome 300	Software version Remote control	Remote control 0: Without 1: Vitotrol 200A or Vitotrol 200 RF 2: Vitotrol 300A or Vitotrol 300 RF or Vitohome 300	Software version Remote control
10:	0	0	0	0	0	0




**Brief scan (cont.)**

	1	2	3	4	5	6
11:	0	0	Software version, extension for heating circuits 2 and 3 with mixer	0	Software version, extension for heating circuits 2 and 3 with mixer	0
<b>Note</b> <i>The displays in fields 3 and 5 are the <b>same</b>.</i>						

**Service indicator**

No service interval can be set at the Vitotronic 300-K. No service message will be displayed.

If a service message is active on any Vitotronic 100, the display of the Vitotronic 300-K will show **"Service"** and  will flash.

Confirm with **OK**. **"Subscriber service"** will be shown.

**Acknowledging the service display**

Press **OK** to acknowledge a service message.

**Note**

*If an acknowledged service message is not reset, **"Service"** will be displayed again the following Monday.*

## Fault display

In the event of a fault, the red fault indicator flashes at the control unit. The 2-digit fault code and  $\Delta$  flash on the display.

### Note

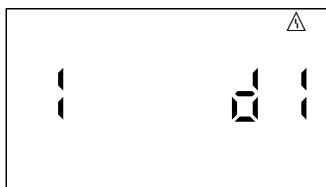
*Any connected central fault message facility starts.*

Other current faults can be displayed with  $\blacktriangle/\blacktriangledown$ .

For an explanation of the fault code, see chapter "Fault codes".

### Example:

Fault code "d1" burner fault



## Acknowledging fault messages

Press **OK**; the default display appears.

### Note

*Any connected central fault message facility stops.*

*If an acknowledged fault is not remedied, the fault message will be re-displayed the following day and the fault message facility restarted.*

## Calling up acknowledged faults

Hold down **OK** for approx. 4 s.

## Calling up fault codes from the fault memory (fault history)

The 10 most recent faults (including those remedied) are saved and can be called up.

Faults are sorted by date.

3. With  $\blacktriangleright$  select  $\Delta$  and activate fault history with **OK**.

4.  $\blacktriangle/\blacktriangledown$  for the required fault message

Service menu:

1. Press **OK** and  $\equiv$  simultaneously for approx. 4 s.

$\mathcal{P}$  flashes on the display.

2. **OK** to confirm

## Fault display (cont.)

### Deleting fault history

While the list is displayed, press **OK** until **✱** flashes. **OK** to confirm.

## Fault codes

Displayed fault code	System characteristics	Cause	Measures
0F	Control mode	Service "0F" is only displayed in the fault history.	Service the appliance.  <b>Note</b> <i>After a service set code "24:0" in group 2.</i>
30	<b>Type GC1B:</b> The burner is started and stopped via the temperature controller.	Short circuit, boiler water temperature sensor	Check boiler water temperature sensor (see page 185).
38	<b>Type GC1B:</b> The burner is started and stopped via the temperature controller.	Lead break, boiler water temperature sensor	Check boiler water temperature sensor (see page 185).
60	<b>Type GC1B:</b> Boiler with maximum temperature, no output reduction, mixing valve return temperature control open <b>Type GC4B:</b> Boiler at maximum temperature	Short circuit, temperature sensor 17 A	<b>Type GC1B</b> Check temperature sensor (see page 185). <b>Type GC4B:</b> Remove temperature sensor. Without temperature sensor: Set code "4A:0" in group 1.

# **Fault codes (cont.)**

Displayed fault code	System characteristics	Cause	Measures
68	<b>Type GC1B:</b> Boiler with maximum temperature, no output reduction, mixing valve return temperature control open <b>Type GC4B:</b> Boiler at maximum temperature	Lead break, temperature sensor 17 A	<b>Type GC1B:</b> Check temperature sensor (see page 185). <b>Type GC4B:</b> Remove temperature sensor. Without temperature sensor: Set code "4A:0" in group 1.
70	<b>Type GC1B:</b> Shunt pump constantly ON. <b>Type GC4B:</b> Control mode	Short circuit, temperature sensor 17 B	<b>Type GC1B:</b> Check temperature sensor (see page 185). <b>Type GC4B:</b> Remove temperature sensor. Without temperature sensor: Set code "4b:0" in group 1.
78	<b>Type GC1B:</b> Shunt pump constantly ON. <b>Type GC4B:</b> Control mode	Lead break, temperature sensor 17 B	<b>Type GC1B:</b> Check temperature sensor (see page 185). <b>Type GC4B:</b> Remove temperature sensor. Without temperature sensor: Set code "4b:0" in group 1.
A0	Boiler cools down.	Fault, safety equipment at "X7" of plug-in adaptor 2 for external safety equipment	Check safety equipment, and reset if required.
A1	Boiler cools down.	Fault, safety equipment at "X3" of plug-in adaptor 2 for external safety equipment	Check safety equipment, and reset if required.

## Fault codes (cont.)

Displayed fault code	System characteristics	Cause	Measures
A2	Boiler cools down.	Fault, safety equipment at "X2" of plug-in adaptor 2 for external safety equipment	Check safety equipment, and reset if required.
A3	Boiler cools down.	Fault, safety equipment at "X1" of plug-in adaptor 2 for external safety equipment	Check safety equipment, and reset if required.
AA	<b>Type GC1B:</b> Control mode	Configuration fault, Therm-Control: Plug <span style="border: 1px solid black; padding: 0 2px;">17</span> <span style="border: 1px solid black; padding: 0 2px;">A</span> not plugged in.	Insert plug <span style="border: 1px solid black; padding: 0 2px;">17</span> <span style="border: 1px solid black; padding: 0 2px;">A</span> . For the Vitocrossal code "0d:0" in group 2 must be set.
AC	<b>Type GC1B:</b> Control mode	Configuration fault, return temperature control: Code "0C:1" in group 2 is set, but plug <span style="border: 1px solid black; padding: 0 2px;">17</span> <span style="border: 1px solid black; padding: 0 2px;">A</span> is not plugged in and/or code "4E:0" in group 1 is not set.	Insert plug <span style="border: 1px solid black; padding: 0 2px;">17</span> <span style="border: 1px solid black; padding: 0 2px;">A</span> and check codes.
Ad	Control mode	Configuration fault, motorised butterfly valve: code "0C:2", "0C:3" or "0C:4" in group 2 is set and code "4E:1" in group 1 is set.	With motorised butterfly valve: set code "4E:0" in group 1. Without motorised butterfly valve: set code "0C:1" in group 2.
b0	<b>Type GC1B:</b> Control mode	Short circuit, flue gas temperature sensor	Check the flue gas temperature sensor (see page 186).
b1	Control mode	Communication error, programming unit	Check connections, and replace the programming unit if required.

## Fault codes (cont.)

Displayed fault code	System characteristics	Cause	Measures
b5	Control mode	Internal error	Check PCB and plug-in connection; replace PCB if required.
b6	Constant mode	Invalid hardware recognised	<p>Check coding address "92" in group 1:  Type GC1B: "92:161"  Type GC4B: "92:166"</p> <p><b>Note</b>  Code "8A:176" in the group 1 must be set for coding address "92" to be displayed.</p>
b7	<p><b>Type GC1B:</b>  Regulating the boiler water temperature to that set at the temperature controller</p> <p><b>Type GC4B:</b>  Regulating the boiler water temperature to the electronic maximum temperature limit (code "06")</p>	Boiler coding card fault	Plug in or replace boiler coding card.
b8	<b>Type GC1B:</b> Control mode	Lead break, flue gas temperature sensor	Check the flue gas temperature sensor (see page 186). Without flue gas temperature sensor: set code "1F:0" in group 2.
bF	Control mode No communication via LON	Incorrect LON communication module	Replace LON communication module.
C1	Boiler cools down.	External safety equipment on plug <span style="border: 1px solid black; padding: 0 2px;">150</span>	Check connection and external safety equipment.

# **Fault codes (cont.)**

Displayed fault code	System characteristics	Cause	Measures
C8	Boiler cools down.	Fault, low water indicator at "X7" of plug-in adaptor 1 for external safety equipment	Check the water level in the system; reset low water indicator (see page 187).
C9	Boiler cools down.	Fault, maximum pressure limiter at "X3" of plug-in adaptor 1 for external safety equipment	Check the system pressure; reset maximum pressure limiter (see page 187).
CA	Boiler cools down.	Fault, minimum or maximum pressure limiter 2 at "X2" of plug-in adaptor 1 for external safety equipment	Check the system pressure; reset minimum or maximum pressure limiter 2 (see page 187).
Cb	Boiler cools down.	Additional high limit safety cut-out fault Or Temperature limiter at "X1" of plug-in adaptor 1 for external safety equipment	Check the system temperature; reset high limit safety cut-out (see page 187).
CE	Control mode	Communication error, plug-in adaptor 1 for external safety equipment	Check the plug-in adaptor (see page 187). Without plug-in adaptor: Set code "30:0" in group 1.
CF	Control mode No communication via LON.	Communication error, control unit LON communication module	Check LON communication module and replace if required. If no LON communication module is installed, set code "76:0" in group 1.
d1	Boiler cools down.	Burner fault	Check the burner.

# **Fault codes (cont.)**

<b>Displayed fault code</b>	<b>System characteristics</b>	<b>Cause</b>	<b>Measures</b>
d2	Control mode	Communication error, plug-in adaptor 2 for external safety equipment	Check the plug-in adaptor (see page 187). Without plug-in adaptor: Set code "31:0" in group 1.
d4	Boiler cools down.	The high limit safety cut-off MCB/ fuse F2 has tripped/blown.	Check the high limit safety cut-off or the burner, burner loop and MCB/ fuse F2.

## **Fault codes only for the Vitotronic 100, type GC4B**

	<b>System characteristics</b>	<b>Cause</b>	<b>Measures</b>
80	Burner control unit in a fault state; system cools down; burner control unit locked out.	Short circuit, boiler water temperature sensor, burner control unit.	Check lead and twin sensor; replace sensor if required.
81	Burner control unit in a fault state.	Sensor drift, boiler water temperature sensor, burner control unit.	Check lead and twin sensor; replace sensor if required.
82	Burner control unit in a fault state; system cools down; burner control unit locked out.	Short circuit, flue gas temperature sensor (A or B), burner control unit.	Check lead and sensors (A and B); replace sensor if required.
83	Burner control unit in a fault state.	Sensor drift, flue gas temperature sensor (A or B), burner control unit.	Check lead and sensors (A and B); replace sensor if required.
88	Burner control unit in a fault state.	Lead break, boiler water temperature sensor, burner control unit.	Check lead and twin sensor; replace sensor if required.
89	Burner control unit in a fault state.	Lead break, flue gas temperature sensor (A or B), burner control unit.	Check lead and sensors (A and B); replace sensor if required.



# **Fault codes (cont.)**

	<b>System characteristics</b>	<b>Cause</b>	<b>Measures</b>
E1	Burner control unit in a fault state.	Valve 1 not tight / gas pressure switch 2 does not open.	Check setting of gas pressure switch 2; check connecting cable; replace gas train.
E2	Burner control unit in a fault state.	Valve 2 not tight; gas pressure switch 2 does not close.	Check setting of gas pressure switch 2; check connecting cable; replace gas train.
E2	Shortage of gas to gas pressure switch 2; valve leak test.	Gas valve does not open; gas valve leaking; gas pressure switch 2 faulty.	Replace gas train.
E3	Burner control unit in a fault state.	Lead break, strapping plug <a href="#">47</a> .	Check strapping plug <a href="#">47</a> .
E4	Burner shuts down.	Multiple detection of undervoltage with recovery and renewed undervoltage.	Check the power supply.
E5	Burner control unit in a fault state.	Internal error of the burner control unit and during test of ionisation input.	Replace burner control unit.
EE	Burner control unit in a fault state.	Internal error in feedback from gas safety valves; output relay does not respond.	Reset burner control unit; replace burner control unit.
EF	Burner control unit in a fault state.	Internal error in feedback from gas safety valves; output relay does not respond.	Reset burner control unit; replace burner control unit.
F0	Operation according to internal burner control unit defaults.	Communication error, burner control unit.	Check plug and KM BUS to burner control unit.

# **Fault codes (cont.)**

	<b>System characteristics</b>	<b>Cause</b>	<b>Measures</b>
F1	Burner control unit in a fault state; system cools down.	Excessive flue gas temperature; excessive gas throughput.	Wait until temperature undershoots the permissible flue gas temperature. Reset burner control unit. Check water level; check heat exchanger surfaces for contamination; check CO <sub>2</sub> setting; set gas throughput according to rated heating output of boiler (for connection values, see boiler service instructions).
F2	Burner control unit in a fault state; system cools down.	Excessive boiler temperature.	Wait until temperature undershoots the permissible boiler water temperature. Reset burner control unit.
F3	Ionisation flame monitor reports faulty flame signal during start-up or post-purge.	Gas train not gas-tight (gas is escaping and burning); incorrect coding card.	Check ionisation path; replace coding card; replace gas train.
F4	No flame builds during safety time; ionisation flame monitor reports no flame signal.	Ionisation electrode incorrectly adjusted; ionisation electrode not plugged in. Earth leakage of electrode or cable.	Insert plug of ionisation electrode; check cables; adjust ionisation electrode (see boiler service instructions).
F4	No flame builds during safety time; ionisation flame monitor reports no flame signal.	Ignition electrodes incorrectly adjusted, electrodes shorted out to earth, faulty ignition unit, faulty burner control unit.	Adjust ignition electrodes (see boiler service instructions); replace ignition unit; replace burner control unit.

# **Fault codes (cont.)**

	<b>System characteristics</b>	<b>Cause</b>	<b>Measures</b>
F4	No flame builds during safety time; ionisation flame monitor reports no flame signal.	Insulation body of ignition or ionisation electrode cracked.	Replace ignition or ionisation electrode.
F4	Poor start-up characteristics; rotary damper does not close.	Servomotor faulty, servomotor connecting cable faulty, output relay faulty (burner control unit).	Replace connecting cable; replace servomotor; replace burner control unit.
F4	Flame does not build during the safety time, no signal reported by the ionisation flame monitor.	Incorrect gas type selected.	Select correct gas type (see boiler service instructions).
F4	Flame does not build during the safety time, no signal reported by the ionisation flame monitor.	Gas train does not open.	Check connecting cable; check gas train and replace if required.
F4	Flame does not build during the safety time, no signal reported by the ionisation flame monitor.	Combustion characteristics not ideal.	Adjust the burner (see boiler service instructions); if necessary also adjust the adjusting screws when the burner is off to be able to start the burner.
F5	Air pressure switch reports no air pressure, fan not running.	Air pressure switch faulty, incorrectly connected or incorrectly set.	Replace air pressure switch, connect or set correctly.
F5	Air pressure switch trips during operation.	Flue gas back pressure; condensate banked up; air pressure switch hose faulty; connecting hose leaking.	Remove flue gas back pressure; check if condensate banked up; reset burner control unit; replace hose.

# **Fault codes (cont.)**

	<b>System characteristics</b>	<b>Cause</b>	<b>Measures</b>
F6	Gas pressure switch reports no gas pressure.	Gas shut-off valve closed; gas pressure switch faulty; multiple problems with gas supply.	Open gas shut-off valve; check gas flow pressure; replace gas filter if required; reset burner control unit; replace gas train.
F7	Fan pressure is produced during the air pressure switch idle state check.	Wind influence on fan.	Check the flue draught (chimney).
F7	Air pressure switch contact is not in the idle state.	Air pressure switch faulty.	Replace the air pressure switch.
F8	Flame extinguishes during operation.	Incorrect gas type selected.	Select correct gas type (see boiler service instructions).
F8	Flame extinguishes during operation.	Burner gauze assembly faulty.	Check burner gauze assembly; replace if damaged.
F8	Flame extinguishes during operation.	Combustion characteristics not ideal.	Adjust burner (see boiler service instructions).
F9	Fan not running; fan speed not reached.	Fan faulty; cables are faulty or broken.	Check cables and replace the fan if required.
F9	Fan ramp-up	Internal error; fan cannot reach its set value.	Replace fan or burner control unit.
F9	Fan speed deviation.	Fan faulty, cable <span style="border: 1px solid black; padding: 0 2px;">100</span> <span style="border: 1px solid black; padding: 0 2px;">A</span> faulty or broken.	Check cable <span style="border: 1px solid black; padding: 0 2px;">100</span> <span style="border: 1px solid black; padding: 0 2px;">A</span> and external power supply. Replace cable and fan if necessary.

## Fault codes (cont.)

	System characteristics	Cause	Measures
F9	No fan feedback.	<ul style="list-style-type: none"> <li>■ Fan faulty.</li> <li>■ Fan may be blocked by dirt.</li> <li>■ External fan power supply not connected or faulty.</li> <li>■ Cable <span style="border: 1px solid black; padding: 0 2px;">100</span> <span style="border: 1px solid black; padding: 0 2px;">A</span> faulty or broken.</li> </ul>	Check cable <span style="border: 1px solid black; padding: 0 2px;">100</span> <span style="border: 1px solid black; padding: 0 2px;">A</span> and external power supply. Replace cable and fan if necessary.
FA	Fan runs without demand; burner control unit in a fault state.	Fan does not reach standstill; cable <span style="border: 1px solid black; padding: 0 2px;">100</span> <span style="border: 1px solid black; padding: 0 2px;">A</span> faulty, fan faulty, burner control unit faulty.	Check flue outlet, wind influence on fan and fan itself. Possibly replace components.
Fd	Burner control unit in a fault state; system cools down; burner control unit locked out.	Burner control unit in a fault state.	Read off fault at the burner control unit display and programming unit (boiler service instructions).

## Fault display

In the event of a fault, the red fault indicator flashes at the control unit. **"Fault"** is displayed and  $\Delta$  flashes.  
The fault code is displayed with **OK**.

### Note

*Any connected central fault message facility starts.*

For an explanation of fault codes, see chapter "Fault codes".  
For some faults, the type of fault is also displayed in plain text.

## Acknowledging fault messages

Follow the instructions on the display.

### Note

*The fault message is transferred to the menu.*

*Any connected central fault message facility stops.*

*If an acknowledged fault is not remedied, the fault message will be re-displayed the following day at 07:00 h, and the fault message facility restarts.*

## Calling up acknowledged fault messages

Extended menu:

1. 
2. **"Fault"**

## Calling up fault codes from the fault memory (fault history)

The 10 most recent faults (including those remedied) are saved and can be called up.

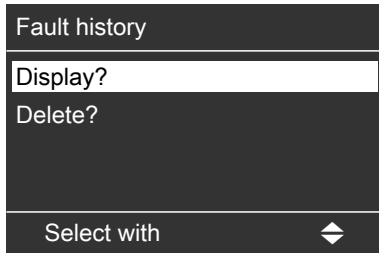
Faults are sorted by date.

### Note

*The list can be deleted.*

## Fault display (cont.)

Press **OK** and **≡** simultaneously for approx. 4 s.



## Fault codes

Displayed fault code	System characteristics	Cause	Measures
10	Operates as if the outside temperature was 0 °C.	Short circuit, outside temperature sensor	Check outside temperature sensor (see page 186).
18	Operates as if the outside temperature was 0 °C.	Lead break, outside temperature sensor	Check outside temperature sensor (see page 186)
19	Operates as if the outside temperature was 0 °C.	Communication error, wireless outside temperature sensor	Check wireless connection (place wireless outside temperature sensor close to the wireless base station). Log off outside temperature sensor then log on again. Replace if required (see wireless base station installation and service instructions).
20	Standalone control unit without flow temperature sensor (flow temperature may not be high enough).	Short circuit, common flow temperature sensor	Check the flow temperature sensor (see page 185).

# **Fault codes (cont.)**

Displayed fault code	System characteristics	Cause	Measures
28	Standalone control unit without flow temperature sensor (flow temperature may not be high enough).	Lead break, common flow temperature sensor	Check the flow temperature sensor (see page 185).
40	Mixer is being closed.	Short circuit, flow temperature sensor, heating circuit with mixer M2 (heating circuit 2)	Check the flow temperature sensor (see page 185).
44	Mixer is being closed.	Short circuit, flow temperature sensor, heating circuit with mixer M3 (heating circuit 3)	Check the flow temperature sensor (see page 185).
48	Mixer is being closed.	Lead break, flow temperature sensor, heating circuit with mixer M2 (heating circuit 2)	Check the flow temperature sensor (see page 185).
4C	Mixer is being closed.	Lead break, flow temperature sensor, heating circuit with mixer M3 (heating circuit 3)	Check the flow temperature sensor (see page 185).
50	Cylinder loading pump on: Set DHW temperature = set flow temperature Priority control is cancelled. Or With cylinder loading system: Cylinder heating is started and stopped via cylinder temperature sensor 2.	Short circuit, cylinder temperature sensor 1	Check cylinder temperature sensor (see page 185).



## Fault codes (cont.)

Displayed fault code	System characteristics	Cause	Measures
51	With cylinder loading system: Cylinder heating is started and stopped via cylinder temperature sensor 1.	Short circuit, cylinder temperature sensor 2	Check cylinder temperature sensor (see page 185).
58	Cylinder loading pump on: Set DHW temperature = set flow temperature Priority control is cancelled. Or With cylinder loading system: Cylinder heating is started and stopped via cylinder temperature sensor 2.	Short circuit, cylinder temperature sensor 1	Check cylinder temperature sensor (see page 185).
59	With cylinder loading system: Cylinder heating is started and stopped via cylinder temperature sensor 1.	Short circuit, cylinder temperature sensor 2	Check cylinder temperature sensor (see page 185).
60	Boiler with maximum temperature, no output reduction, mixing valve return temperature control open	Short circuit, temperature sensor 17 A	Check temperature sensor (see page 185).
68	Boiler with maximum temperature, no output reduction, mixing valve return temperature control open	Lead break, temperature sensor 17 A	Check temperature sensor (see page 185). Without temperature sensor: Set code "4A:0" in the <b>"General"</b> group.

# **Fault codes (cont.)**

Displayed fault code	System characteristics	Cause	Measures
70	Shunt pump constantly ON. With cylinder loading system: close 3-way mixing valve; no DHW heating	Short circuit, temperature sensor <span style="border: 1px solid black; padding: 0 2px;">17</span> <span style="border: 1px solid black; padding: 0 2px;">B</span>	Check temperature sensor (see page 185).
78	Shunt pump constantly ON. With cylinder loading system: close 3-way mixing valve; no DHW heating	Lead break, temperature sensor <span style="border: 1px solid black; padding: 0 2px;">17</span> <span style="border: 1px solid black; padding: 0 2px;">B</span>	Check temperature sensor (see page 185). Without temperature sensor: set code "4b:0" in the <b>"General"</b> group.
90	Control mode	Short circuit, temperature sensor <span style="border: 1px solid black; padding: 0 2px;">7</span> , connection at solar control module, type SM1	Check temperature sensor <span style="border: 1px solid black; padding: 0 2px;">7</span> (see separate installation and service instructions).
91	Control mode	Short circuit, temperature sensor <span style="border: 1px solid black; padding: 0 2px;">10</span> , connection at solar control module, type SM1	Check temperature sensor <span style="border: 1px solid black; padding: 0 2px;">10</span> (see separate installation and service instructions).
92	No solar DHW heating	Short circuit, collector temperature sensor, connection of temperature sensor <span style="border: 1px solid black; padding: 0 2px;">6</span> at solar control module, type SM1 or sensor at S1 of the Vitosolic	Check sensor at the solar control unit (see separate installation and service instructions).
93	Control mode	Short circuit, temperature sensor, connection at S3 of the Vitosolic	Check sensor at the solar control unit (see separate installation and service instructions).

## Fault codes (cont.)

Displayed fault code	System characteristics	Cause	Measures
94	No solar DHW heating	Short circuit, cylinder temperature sensor, connection of temperature sensor [5] at solar control module, type SM1 or sensor at S2 of the Vitosolic	Check sensor at the solar control unit (see separate installation and service instructions).
98	Control mode	Lead break, temperature sensor [7], connection at solar control module, type SM1	Check temperature sensor [7] (see separate installation and service instructions). Check coding address "20" in the <b>"Solar"</b> group.
99	Control mode	Lead break, temperature sensor [10], connection at solar control module, type SM1	Check temperature sensor [10] (see separate installation and service instructions). Check coding address "20" in the <b>"Solar"</b> group.
9A	No solar DHW heating	Lead break, collector temperature sensor, connection of temperature sensor [6] at solar control module, type SM1 or sensor at S1 of the Vitosolic	Check sensor at the solar control unit (see separate installation and service instructions).
9b	Control mode	Lead break, temperature sensor, connection at S3 of the Vitosolic	Check sensor at the solar control unit (see separate installation and service instructions).

# **Fault codes** (cont.)

Displayed fault code	System characteristics	Cause	Measures
9C	No solar DHW heating	Lead break, cylinder temperature sensor, connection of temperature sensor <b>5</b> at solar control module or sensor at S2 of the Vitosolic	Check sensor at the solar control unit (see separate installation and service instructions).
9E	Control mode	No flow rate in solar circuit or flow rate too low, or temperature limiter has responded.	Check solar circuit. Acknowledge fault message (see separate installation and service instructions).
9F	Control mode	Fault, solar control module, type SM1 or Vitosolic Displayed if a fault occurs at these devices that has no fault code in the Vitotronic.	Check solar control unit (see separate installation and service instructions).
A7	Control mode	Programming unit fault	Replace the programming unit.
Ab	Control mode, DHW cylinder may be cold	Configuration fault, cylinder loading system: Code "55:3" has been set in the <b>"DHW"</b> group, but plug <b>17</b> <b>B</b> is not plugged in and/or codes "4C:1" and "4E:2" in the <b>"General"</b> group have not been set.	Insert plug <b>17</b> <b>B</b> and check codes.
b1	Control mode	Communication error, programming unit	Check connections, and replace the programming unit if required.

## Fault codes (cont.)

Displayed fault code	System characteristics	Cause	Measures
b5	Control mode	Internal error	Check PCB is plugged in correctly.
b6	Constant mode	Invalid hardware recognised	<p>Check coding address "92" in the <b>"General"</b> group; "92:187" must be set.</p> <p><b>Note</b> Code "8A:176" in the <b>"General"</b> group must be selected for coding address "92" to be displayed.</p>
bA	Mixer Close	Communication error, PCB extension for heating circuits 2 and 3 with mixer	Check that the PCB and ribbon cable are plugged in correctly, and replace PCB if required.
bC	Control mode without remote control	Communication error, Vitotrol remote control unit, heating circuit without mixer A1 (heating circuit 1)	<p>Check connections, cable (see separate installation and service instructions) and coding address "A0" in the <b>"Heating circuit..."</b> group.</p> <p>With wireless remote control: Place the remote control near the wireless base station and check connection (see separate installation and service instructions).</p>

# **Fault codes (cont.)**

Displayed fault code	System characteristics	Cause	Measures
bD	Control mode without remote control	Communication error, Vitotrol remote control unit, heating circuit with mixer M2 (heating circuit 2)	Check connections, cable (see separate installation and service instructions) and coding address "A0" in the <b>"Heating circuit..."</b> group. With wireless remote control: Place the remote control near the wireless base station and check connection (see separate installation and service instructions).
bE	Control mode without remote control	Communication error, Vitotrol remote control unit, heating circuit with mixer M3 (heating circuit 3)	Check connections, cable (see separate installation and service instructions) and coding address "A0" in the <b>"Heating circuit..."</b> group. With wireless remote control: Place the remote control near the wireless base station and check connection (see separate installation and service instructions).
bF	Control mode No communication via LON	Incorrect LON communication module	Replace LON communication module.
C2	Control mode	Fault, KM BUS to solar control module, type SM1 or to the Vitosolic	Check KM BUS cable and device. Without solar control unit: Set code "54:0" in the <b>"General"</b> group.

## Fault codes (cont.)

Displayed fault code	System characteristics	Cause	Measures
CF	Control mode No communication via LON	Communication error, control unit LON communication module	Check LON communication module and replace if required. If no LON communication module is installed, set code "76:0" in the <b>"General"</b> group.
d3	Control mode	Communication error, EA1 extension	Check connections (see page 196). Without EA1 extension: Set code "5b:0" in the <b>"General"</b> group.
d5	Boiler ramps to the electronic maximum boiler water temperature limit.	No communication between boiler circuit and cascade control unit	Check communication by means of a subscriber check, cables to the Vitotronic 100 and codes.
d6	Control mode	Input DE1 at EA1 extension reports a fault	Remove fault at device concerned.
d7	Control mode	Input DE2 at EA1 extension reports a fault	Remove fault at device concerned.
d8	Control mode	Input DE3 at EA1 extension reports a fault.	Remove fault at device concerned.
dA	Control mode without room influence	Short circuit, room temperature sensor, heating circuit without mixer A1 (heating circuit 1)	Check room temperature sensor (see page 185).
db	Control mode without room influence	Short circuit, room temperature sensor, heating circuit with mixer M2 (heating circuit 2)	Check room temperature sensor (see page 185).
dC	Control mode without room influence	Short circuit, room temperature sensor, heating circuit with mixer M3 (heating circuit 3)	Check room temperature sensor (see page 185).

## Fault codes (cont.)

Displayed fault code	System characteristics	Cause	Measures
dd	Control mode without room influence	Lead break, room temperature sensor, heating circuit without mixer A1 (heating circuit 1)	Check room temperature sensor (see page 185).
dE	Control mode without room influence	Lead break, room temperature sensor, heating circuit with mixer M2 (heating circuit 2)	Check room temperature sensor (see page 185).
dF	Control mode without room influence	Lead break, room temperature sensor, heating circuit with mixer M3 (heating circuit 3)	Check room temperature sensor (see page 185).

### Note

If subscriber faults occur, "**Subscriber fault ...**" is displayed.



## Boiler control unit Vitotronic 100, type GC1B

### Brief description

- The boiler water temperature is regulated by starting and stopping the burner or through modulation.
- The set boiler water temperature is specified by the Vitotronic 300-K cascade control unit.
- The boiler coding card specifies a minimum boiler water temperature that must be maintained to protect the boiler.
- In conjunction with Therm-Control:  
The set boiler water temperature will be increased when the actual temperature at the Therm-Control sensor undershoots the set temperature.

### Functions

The boiler water temperature is captured by the following equipment:

- High limit safety cut-out STB (liquid expansion)
- Temperature controller TR (liquid expansion)
- Boiler water temperature sensor NTC 10 kΩ

Upper control range limits

- High limit safety cut-out STB  
120/110/100 °C
- Temperature controller TR  
95/100/110 °C
- Electronic maximum temperature limit:
  - Setting range: 20 to 127 °C
  - Changed at coding address "06" in group 2.

Lower control range limits

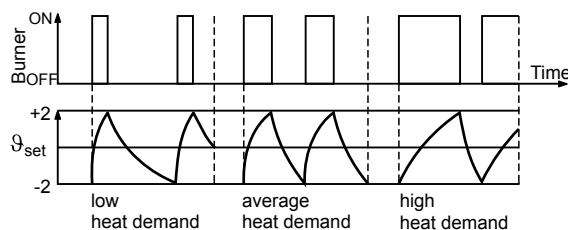
- In standard mode and when frost protection is enabled, the boiler water temperature will be regulated subject to the respective boiler.

## Boiler control unit Vitotronic 100, type GC1B (cont.)

### Switching hysteresis, burner

#### Permanent switching hysteresis

Code "04:0"



#### Heat demand-dependent switching hysteresis

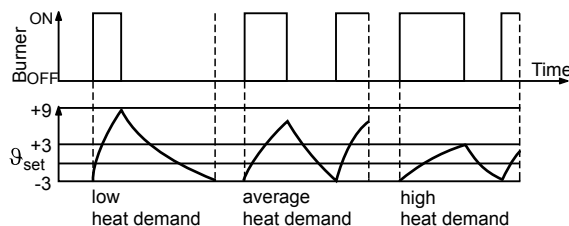
The heat demand-dependent switching hysteresis takes the boiler load into account.

The switching hysteresis, i.e the burner runtime varies subject to actual heat demand.

#### ERB50 function

Code "04:1"

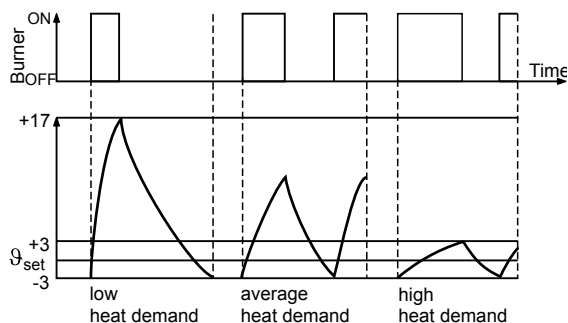
Subject to heat demand, values between 6 and 12 K result.



#### ERB80 function

Code "04:2"

Subject to heat demand, values between 6 and 20 K result.

**Boiler control unit Vitotronic 100, type GC1B (cont.)****Control sequence****Boiler goes cold**

(set value  $-2\text{ K}$ )

The burner start signal is set as the set boiler water temperature minus  $2\text{ K}$ . The burner starts its own monitoring program.

**Note**

*The burner start may be delayed by a few minutes subject to the number of auxiliary circuits and the combustion type.*

**Boiler heats up**

(set value  $+2\text{ K}$ )

The burner shuts down.

Modulating burner:

The burner stop point is determined by the stop differential (coding address "13" in group 2).

## Boiler control unit Vitotronic 100, type GC4B

### Brief description

- The boiler water temperature is regulated by modulating the burner.
- The set boiler water temperature is determined from the following parameters:
  - Set flow temperature of heating circuit A1 (system circuit) or the heating circuits connected via LON
  - External demand

## Cascade control of the Vitotronic 300-K

### Brief description

The flow temperature is regulated by starting or stopping the burners or by starting/stopping individual burner stages.

- Standalone control (see page 101)
- Sequential control (see page 101)
- Subject to system version, we differentiate between condensing strategy (see page 102) and two conventional boiler strategies (see page 104).

### Set flow temperature

The set flow temperature is determined from the following parameters:

- Set flow temperature of heating circuit without mixer A1 (heating circuit 1) and heating circuits with mixer M2 (heating circuit 2) and M3 (heating circuit 3).
- Set flow temperature of additional consumers.
- Set DHW temperature.
- External demands.

Upper control range limits:

Maximum limit of the system flow temperature (coding address "37" in the **"Cascade"** group).

Lower control range limits:

Minimum limit of the system flow temperature (coding address "36" in the **"Cascade"** group).

## Cascade control of the Vitotronic 300-K (cont.)

### Standalone control

Boilers connected in parallel	Boilers connected in series
<ul style="list-style-type: none"> <li>■ Without and with flow temperature sensor (see the following table).</li> <li>■ The cascade control defaults the set boiler water temperature for all currently active boilers. Every boiler control unit regulates to the defaulted set value.</li> </ul> <p>The following control strategies are available:</p> <ul style="list-style-type: none"> <li>■ Condensing strategy (see page 102)</li> <li>■ Conventional boiler strategy 1 (see page 104)</li> <li>■ Conventional boiler strategy 2 (see page 104)</li> </ul>	<ul style="list-style-type: none"> <li>■ Without and with flow temperature sensor (see the following table).</li> <li>■ The control strategy is set automatically to conventional boiler strategy 2, code "3C:2" in the <b>"Cascade"</b> group (see page 104).</li> <li>■ The cascade control defaults the set boiler water temperature for all currently active boilers. Every boiler control unit regulates to the defaulted set value.</li> </ul> <p>If the lead boiler (condensing boiler) does not achieve the defaulted set value, it will only act to control the return temperature of the conventional boiler downstream. The conventional boiler starts later and is also shut down later.</p>
With flow temperature sensor	Without flow temperature sensor
<p>Set code "3b:1" or "3b:3" in the <b>"Cascade"</b> group.</p> <p>The control deviation is calculated from the set flow temperature and the actual flow temperature to determine the start and shutdown criteria.</p>	<p>Set code "3b:0" or "3b:2" in the <b>"Cascade"</b> group.</p> <p>The control deviation is calculated from the set boiler water temperature and the estimated average actual boiler water temperature of the currently active boilers to determine the start and shutdown criteria. Only boilers with open motorised butterfly valves are taken into consideration.</p>

### Sequential control

- With flow temperature sensor.
- Set code "3b:4" in the **"Cascade"** group.

## Cascade control of the Vitotronic 300-K (cont.)

- The control strategy is set automatically to conventional boiler strategy 2, code "3C:2" in the **"Cascade"** group (see page 104).
- The cascade control unit regulates to the defaulted set flow temperature by defaulting the output for each individual boiler. The lead boiler can be operated in modulating mode. All other boilers are operated in two stages via a defaulted output (incl. modulating burners).

## Control strategies

### Condensing strategy

Benefit:

Optimum utilisation of the condensing effect and long burner runtimes.

Set code "3C:0" in the **"Cascade"** group.

It is the aim of the condensing strategy to operate as many boilers as possible at the lowest output level.

#### ■ Starting criterion:

Boilers are started via an output statement (code "3d:1" in the **"Cascade"** group).

An additional boiler will start if the current heat demand can also be covered by the currently active boilers plus the next boiler in the boiler sequence (see page 57).

#### ■ Shutdown criterion:

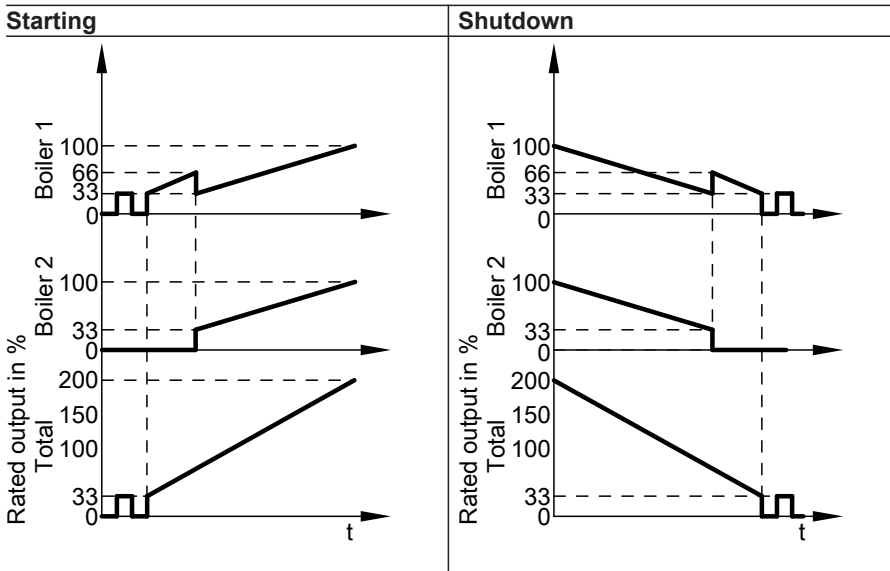
Boilers are shut down via a shutdown integral. The shutdown criterion is met when the shutdown integral exceeds a limit set at coding address "46" in the **"Cascade"** group and the boiler started last will be shut down.

## Cascade control of the Vitotronic 300-K (cont.)

### Example (code "3C:0" in the "Cascade " group)

Two-boiler system with modulating burners:

- Boiler 1: 100 % rated heating output  
(base load set to 33 %)
- Boiler 2: 100 % rated heating output  
(base load set to 33 %)



**Cascade control of the Vitotronic 300-K** (cont.)**Conventional boiler strategies**

	<b>Conventional boiler strategy 1</b>	<b>Conventional boiler strategy 2</b>
<b>Benefit</b>	<p>As few boilers as possible are operational.</p> <p>Set code "3C:1" in the <b>"Cascade"</b> group.</p> <p>Conventional boilers are preferably operated at their upper output range, to reliably prevent formation of condensate due to low return temperatures. An additional boiler will only be started if the maximum output of all currently active burners is insufficient to achieve the set flow temperature. A boiler will be shut down when the remaining boilers can achieve the required output on their own.</p>	<p>Long burner runtimes.</p> <p>Code "3C:2" in the <b>"Cascade"</b> group (delivered condition).</p> <p>An additional boiler will only be started if the maximum output of all currently active burners is insufficient to achieve the set flow temperature.</p> <p>A boiler will be shut down if the burners were ramped down to their minimum output because of a major negative control deviation and the output is still too high.</p>
<b>Starting criterion</b>	Boilers are started via a starting integral. The next boiler in the boiler sequence will be started if the value set in coding address "45" in the <b>"Cascade"</b> group is exceeded (see page 57).	Boilers are started via a starting integral. The next boiler in the boiler sequence will be started if the value set in coding address "45" in the <b>"Cascade"</b> group is exceeded (see page 57).
<b>Shutdown criterion</b>	Boilers are shut down by reducing their output (code "3d:1" in the <b>"Cascade"</b> group). A boiler is shut down when the current heat demand can be covered without the boiler that was started last.	Boilers are shut down via a shutdown integral. The shutdown criterion is met when the shutdown integral exceeds a limit set at coding address "46" in the <b>"Cascade"</b> group and the boiler started last will be shut down.



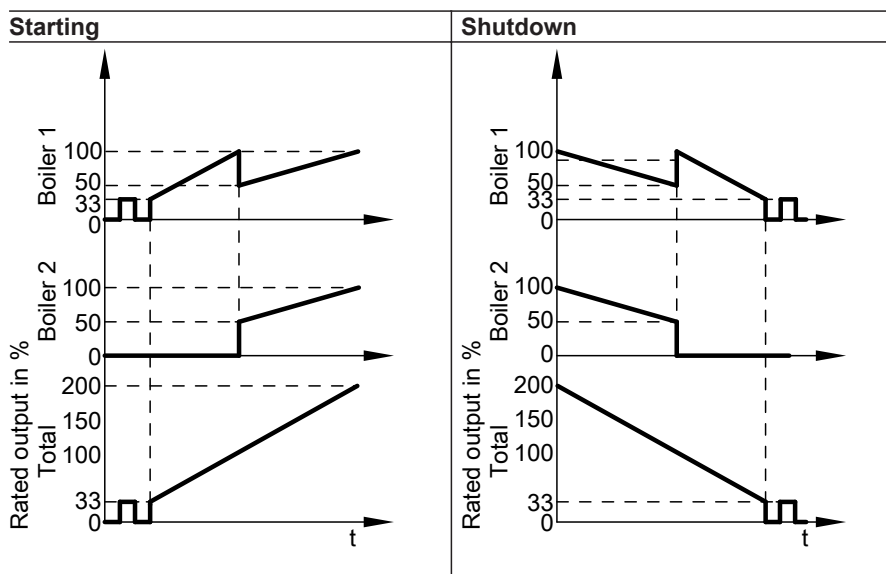
## Cascade control of the Vitotronic 300-K (cont.)

### Examples

Two-boiler system with modulating burners:

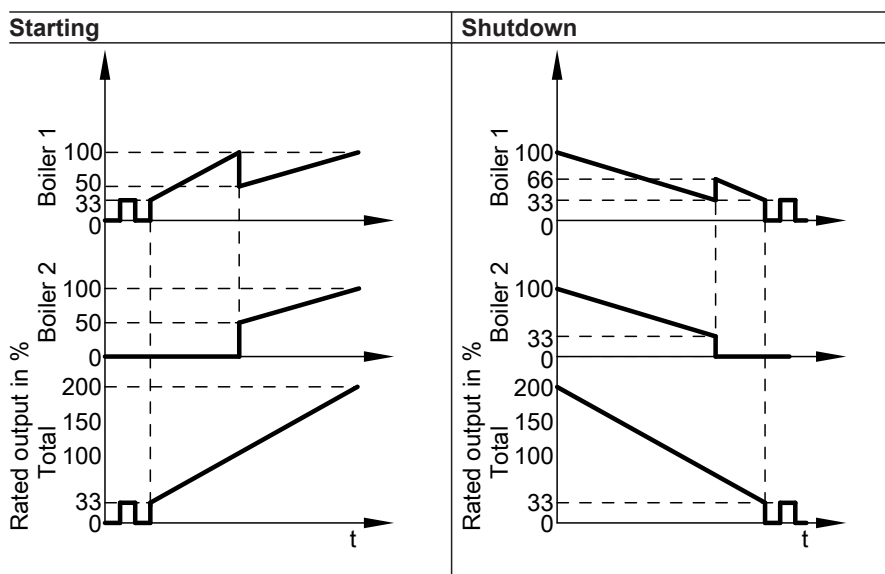
- Boiler 1: 100 % rated heating output  
(base load set to 33 %)
- Boiler 2: 100 % rated heating output  
(base load set to 33 %)

### Conventional boiler strategy 1 (code "3C:1" in the "Cascade" group)



## Cascade control of the Vitotronic 300-K (cont.)

### Conventional boiler strategy 2 (code "3C:2" in the "Cascade" group)



## Heating circuit control of the Vitotronic 300-K

### Brief description

- The control unit has control circuits for one heating circuit without mixer A1 (heating circuit 1) and two heating circuits with mixer M2 (heating circuit 2) and M3 (heating circuit 3).
- The set flow temperature of each heating circuit is determined from the following parameters:
  - Outside temperature
  - Set room temperature
  - Operating mode
  - Heating curve slope and level
- The flow temperature of the heating circuit without mixer corresponds to the common system flow temperature.
- The flow temperature of the heating circuits with mixer is regulated by the stepped opening or closing of the mixers. The mixer motor control changes the actuating and pause times subject to the control differential (control deviation).

## Heating circuit control of the Vitotronic 300-K (cont.)

### Functions

The heating circuit without mixer is subject to the boiler water temperature and its control range limits.

The heating circuit pump is the only actuator.

The flow temperature of the heating circuits with mixer is captured by the flow temperature sensor of the relevant heating circuit.

■ Upper control limit:

Electronic maximum flow temperature limit

Coding address "C6" in the **"Heating circuit..."** group.

■ Lower control range limit:

Electronic minimum flow temperature limit

Coding address "C5" in the **"Heating circuit..."** group.

### Time program

The control unit switches over according to the time program. In the **"Heating and DHW"** operating program, the control unit switches between "Central heating with standard room temperature" and "Central heating with reduced room temperature".

Every operating mode has its own set level.

4 time phases per day can be selected.

### Outside temperature

A heating curve must be set for matching the control unit to the building and the heating system.

The heating curve characteristics determine the set boiler water temperature subject to outside temperature. The control unit regulates according to an average outside temperature. This comprises the actual and the adjusted outside temperature.

### Room temperature

In conjunction with the remote control and room temperature hook-up (coding address "b0" in the **"Heating circuit..."** group):

Compared with the outside temperature, the room temperature has a greater influence on the set boiler water temperature (changed at coding address "b2" in the **"Heating circuit..."** group).

In conjunction with heating circuits with mixer:

For control differentials (actual value deviation) above 2 K room temperature, the influence can be increased again (coding address "b6" in the **"Heating circuit..."** group):

■ Quick heat-up

Raise the set room temperature by at least 2 K by the following measures:

- Activating party mode
- Changing from central heating with reduced temperature to central heating with standard temperature
- Start optimisation (coding address "b7" in the **"Heating circuit..."** group)

Quick heat-up stops when the set room temperature has been reached.

## Heating circuit control of the Vitotronic 300-K (cont.)

### ■ Quick setback

Reduce the set room temperature by at least 2 K by the following measures:

- Activating economy mode
- Changing from central heating with standard temperature to central heating with reduced temperature
- Stop optimisation (coding address "C1" in the **"Heating circuit..."** group)

Quick setback ends when the set room temperature has been reached.

## DHW temperature

### Priority control

- With priority control: (code "A2:2" in the **"Heating circuit..."** group):  
The set flow temperature will be adjusted to 0 °C during cylinder heating. The mixer closes and the heating circuit pump is switched off.
- Without priority control:  
The heating circuit control unit continues to operate with the same set value.

### Heating circuit pump logic – Economy circuits

The heating circuit pump is switched off (set flow temperature set to 0 °C) if one of the following criteria is met:

- The outside temperature exceeds the value set at coding address "A5" in the **"Heating circuit..."** group.
- The adjusted outside temperature exceeds the value set at coding address "A6" in the **"Heating circuit..."** group.

- The mixer has been attempting to close for more than 12 minutes (mixer economy function, coding address "A7" in the **"Heating circuit..."** group).
- The duration of the pump idle time set at coding address "A9" in the **"Heating circuit..."** group has been reached.

Requirements:

- There is no risk of frost.
- Coding address "b0" in the **"Heating circuit..."** group must be set to 0.

### Note

*If, during the pump idle time, the system is switched to heating mode or the set room temperature is increased, the heating circuit pump is switched ON, even if the time has not yet elapsed.*

- The actual room temperature exceeds the value set at coding address "b5" in the **"Heating circuit..."** group.

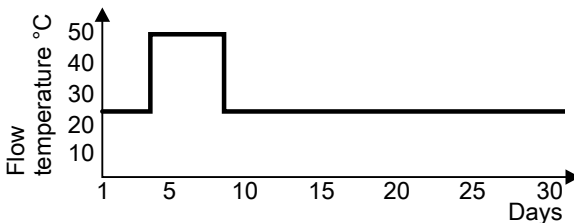
### Screed drying

- In conjunction with a heating circuit with mixer.
- For drying screeds observe the information provided by the screed manufacturer.
- The heating circuit pump of the heating circuit with mixer is switched on and the flow temperature is maintained in accordance with the selected profile.
- After completion (30 days), the mixer circuit will again be regulated automatically via the set parameters.
- Observe EN 1264.

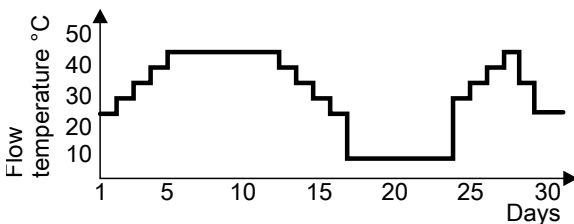
## Heating circuit control of the Vitotronic 300-K (cont.)

- The report to be provided by the heating contractor must contain the following details on heat-up:
  - Heat-up data with respective flow temperatures
  - Max. flow temperature achieved
  - Operating conditions and outside temperature during handover of the heating system
- The various temperature profiles are adjustable via coding address "F1" in the **"Heating circuit..."** group.
- The function continues after power failure or after the control unit has been switched off. The **"Heating and DHW"** heating program will be enabled if the screed drying function is terminated or if code "F1:0" is manually adjusted.

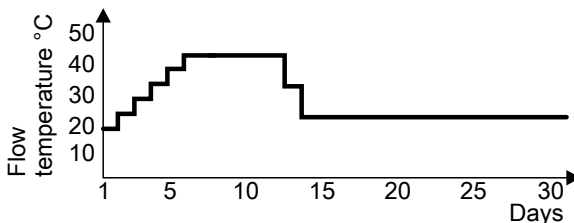
### Temperature profile 1: (EN 1264-4) code "F1:1"



### Temperature profile 2: (ZV parquet and flooring technology) code "F1:2"

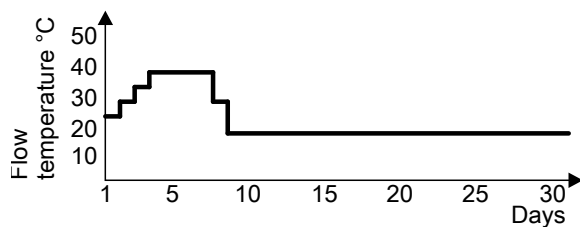


### Temperature profile 3: Code "F1:3"

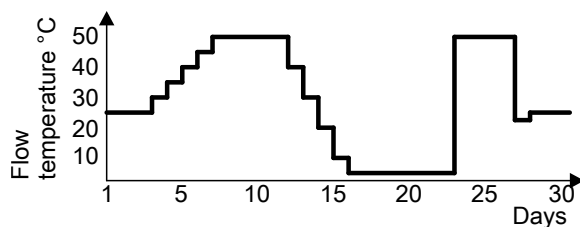


## Heating circuit control of the Vitotronic 300-K (cont.)

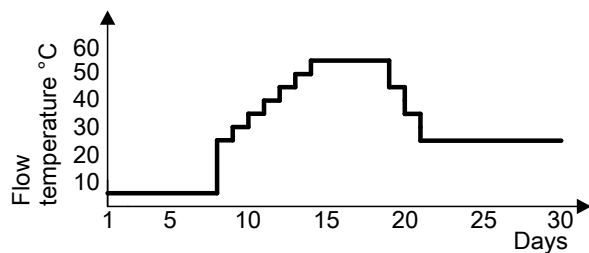
### Temperature profile 4: Code "F1:4"



### Temperature profile 5: Code "F1:5"

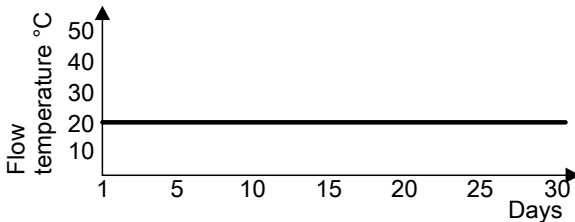


### Temperature profile 6: Code "F1:6"



## Heating circuit control of the Vitotronic 300-K (cont.)

### Temperature profile 7: Code "F1:15"



### System dynamics

You can influence the control characteristics of the mixers at coding address "C4" in the **"Heating circuit..."** group.

### Central control

Central control for a heating circuit can be programmed via coding address "7A" in the **"General"** group.

The heating and holiday program then applies to **all** additional heating circuits of the system.

For these heating circuits, when the heating and holiday program is enabled, **"Central control"** is displayed. Any holiday programs that may have been set will be deleted.

Party and economy modes cannot be enabled on **all** control units.

### Frost protection

The flow temperature is maintained in accordance with the heating curve for the reduced set room temperature, but at min. 10 °C.

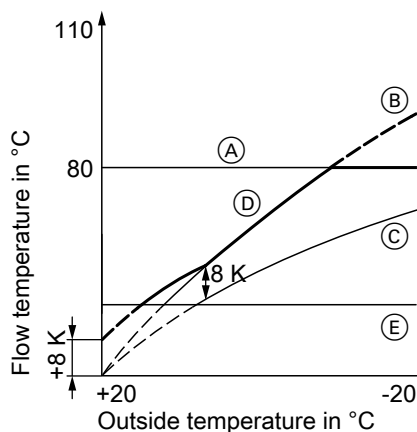
A variable frost limit can be set in accordance with coding address "A3" in the **"Heating circuit..."** group.

### Therm-Control

The output is reduced if the actual temperature at the Therm-Control sensor undershoots the set temperature. For this, the mixers of downstream heating circuits are closed.

## Heating circuit control of the Vitotronic 300-K (cont.)

### Flow temperature control



- (A) Maximum flow temperature limit (coding address "37" in the "Cascade" group)
- (B) Slope = 1.8 for heating circuit without mixer
- (C) Slope = 1.2 for heating circuit with mixer
- (D) Common flow temperature (at a differential temperature = 8 K)
- (E) Lower common flow temperature

#### Differential temperature:

The differential temperature is adjustable at coding address "9F" in the "General" group, delivered condition 8 K.

The differential temperature is the value by which the common flow temperature should be higher than the highest currently required flow temperature of the heating circuit with mixer.

#### ■ System with only one heating circuit with mixer:

The common set flow temperature is regulated automatically to 8 K above the set flow temperature of the heating circuit with mixer.

- System with heating circuit without mixer and heating circuits with mixer: The common set flow temperature is regulated in accordance with its own heating curve. The differential temperature of 8 K towards the set flow temperature of the heating circuits with mixer is set at the factory.

### Raising the reduced room temperature

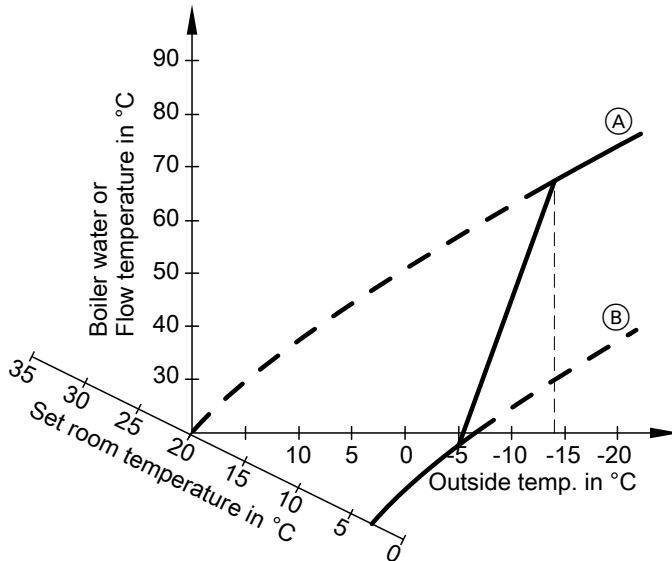
During operation with reduced room temperature, the reduced set room temperature can be automatically raised subject to the outside temperature. The temperature is raised in accordance with the selected heating curve, but no higher than the set standard room temperature.

The outside temperature limits for the start and end of the temperature raising can be adjusted via coding addresses "F8" and "F9" in the "Heating circuit..." group.



## Heating circuit control of the Vitotronic 300-K (cont.)

### Example using the settings in the delivered condition



Ⓐ Heating curve for operation with standard room temperature

Ⓑ Heating curve for operation with reduced room temperature

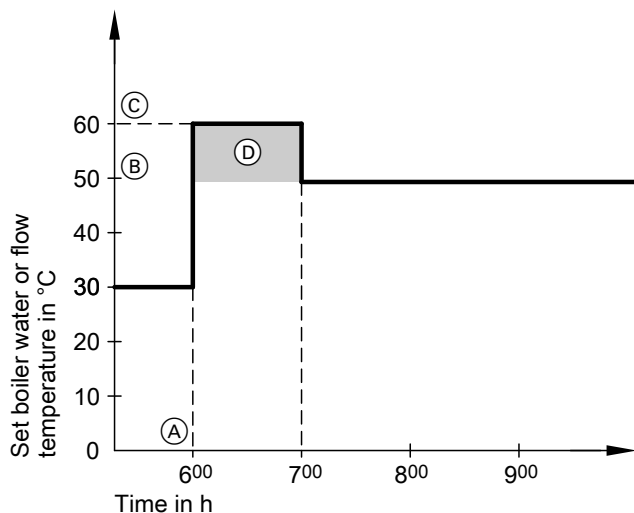
### Reducing the heat-up time

During the transition from operation with reduced room temperature to operation with standard room temperature, the boiler water or flow temperature will be raised in accordance with the selected heating curve. The boiler water or flow temperature increase can be automatically raised.

The value and duration of the additional increase of the set boiler water or flow temperature can be adjusted in coding addresses "FA" and "Fb" in the **"Heating circuit..."** group.

## Heating circuit control of the Vitotronic 300-K (cont.)

### Example using the settings in the delivered condition



- (A) Start of operation with standard room temperature
- (B) Set boiler water or flow temperature in accordance with the selected heating curve
- (C) Set boiler water or flow temperature in accordance with coding address "FA":  
 $50\text{ °C} + 20\text{ \%} = 60\text{ °C}$
- (D) Duration of operation with raised set boiler water or flow temperature in accordance with coding address "Fb":  
 60 min

## Control sequence

### Mixer circuit

The mixer motor will not be controlled within the "neutral zone" ( $\pm 1\text{ K}$ ).

### Flow temperature drops

(Set value  $-1\text{ K}$ )

The mixer motor receives the signal "Mixer open". The signal duration lengthens with an increasing control differential. The duration of pauses reduces with an increasing control differential.

## Heating circuit control of the Vitotronic 300-K (cont.)

### Flow temperature rises

(Set value +1 K)

The mixer motor receives the signal "Mixer closed". The signal duration lengthens with an increasing control differential. The duration of pauses reduces with an increasing control differential.

## Cylinder temperature control of the Vitotronic 300-K

### Brief description

- The cylinder temperature control is a constant temperature control function. This is achieved by starting and stopping the circulation pump for cylinder heating.  
The switching differential is  $\pm 2.5$  K.
- When the DHW cylinder is heated, a set flow temperature is specified that is 20 K higher than the set DHW temperature (adjustable at coding address "60" in the "DHW" group).

### Functions

#### Time program

An automatic or an individual time program may be selected for DHW heating and the DHW circulation pump.

Compared with the heating circuit heat-up phase, DHW heating starts 30 min earlier in automatic mode.

The individual time program enables up to 4 time phases per day to be set for DHW heating and the DHW circulation pump for every day of the week.

All cylinder heating sequences will be completed independently of the time program.

## Cylinder temperature control of the Vitotronic... (cont.)

### In conjunction with coding address "7F" in the "General" group

- Detached house  
Code "7F:1":
  - Automatic mode  
The heating times for heating circuit 1 are applied to systems with two or three heating circuits.
  - Individual time program  
The time phases for DHW heating and the DHW circulation pump have the same effect on all heating circuits.
- Apartment building  
Code "7F:0":
  - Automatic mode  
For systems with two or three heating circuits, the heating times for the relevant heating circuit will be applied.
  - Individual time program  
The time phases for DHW heating and the DHW circulation pump can be adjusted **individually for each heating circuit**.

### Priority control

- With priority control: (code "A2:2" in the **"Heating circuit..."** group):  
The set flow temperature will be adjusted to 0 °C during cylinder heating.  
The mixer closes and the heating circuit pump is switched off.
- Without priority control:  
The heating circuit control unit continues to operate with the same set value.

### Frost protection

The DHW cylinder will be heated to 20 °C if the DHW temperature falls below 5 °C.

### Auxiliary function for DHW heating

This function is activated by providing a second set DHW temperature via coding address "58" in group **"DHW"** and activating the fourth DHW phase for DHW heating.

### Set DHW temperature

The set DHW temperature can be adjusted between 10 and 60 °C.

The set value range can be extended up to 95 °C at coding address "56" in the **"DHW"** group.

The set default value of the programming unit and/or the Vitotrol 300 remote control units can be assigned at coding address "66" in the **"DHW"** group.

### DHW circulation pump

This delivers hot water to the draw-off points at adjustable times.  
Four time phases can be selected at the control unit for every day.

### Auxiliary circuits

DHW heating in conjunction with the heating circuits can be disabled or enabled by changing over the operating program (see coding address "d5" in the **"Heating circuit..."** group).

## Cylinder temperature control of the Vitotronic... (cont.)

### System with cylinder loading system

The above functions also apply in conjunction with cylinder loading systems.

Set the following codes:

"55:3" in the **"DHW"** group; "4C:1",

"4E:2" in the **"General"** group.

The DHW cylinder is only reheated by the boiler if the temperature falls below this value.

### Control sequence

The following codes in the **"DHW"** group influence the controlled sequence.

#### Cylinder heating (code "55:0")

The DHW cylinder goes cold (set value -2.5 K, adjustable at coding address "59"):

- The common set flow temperature is set 20 K higher than the set DHW temperature (adjustable at coding address "60").

The DHW cylinder is hot (set value +2.5 K):

- The common set flow temperature is returned to the set weather-compensated value.
- Pump run-on:
 

The circulation pump runs on after cylinder heating until one of the following criteria is met:

  - The set DHW temperature is exceeded by 5 K.
  - The set max. run-on time is reached (coding address "62").
- Without pump run-on (code "62:0").

### System with solar control unit

A third set DHW temperature can be specified at coding address "67" in the **"DHW"** group.

The DHW cylinder is only reheated by the boiler if the temperature falls below this value.

#### Adaptive cylinder heating (code "55:1")

With adaptive cylinder heating, the speed of the temperature rise during DHW heating is taken into account.

The DHW cylinder goes cold (set value -2.5 K, adjustable at coding address "59"):

- The common set flow temperature is set 20 K higher than the set DHW temperature (adjustable at coding address "60").

The DHW cylinder is hot:

- The control unit checks whether the boiler will still be required to supply heating energy after the cylinder has been heated up or whether residual boiler heat should be transferred to the DHW cylinder.
 

Accordingly, the control unit determines the burner and circulation pump stop times to prevent the set DHW temperature being substantially exceeded after the cylinder has been heated up.

## Cylinder temperature control of the Vitotronic... (cont.)

### Cylinder temperature control with 2 cylinder temperature sensors (code "55:2")

Cylinder temperature sensor 1 enables the circulation pump for cylinder heating and is evaluated for stop conditions during the pump run-on time.

Cylinder temperature sensor 2:

Cylinder heating will start early if a lot of hot water is drawn off. Cylinder heating will terminate early if no hot water is drawn off.

DHW cylinder goes cold:

- Set value  $-2.5\text{ K}$ , adjustable at coding address "59"  
or
- Actual DHW temperature at sensor 2  $<$  set DHW temperature  $\times$  factor for start time (adjustment at coding address "69")

The DHW cylinder is hot:

- Set value  $+2.5\text{ K}$   
and
- Actual DHW temperature at sensor 2  $>$  set DHW temperature  $\times$  factor for stop time (adjustment at coding address "68")

### Code "55:3" in the "DHW" group, cylinder temperature control, cylinder loading system

The DHW cylinder goes cold (set value  $-2.5\text{ K}$ , adjustable at coding address "59"):

- The common set flow temperature is set  $20\text{ K}$  higher than the set DHW temperature (adjustable at coding address "60").
- The primary pump in the cylinder loading system starts.
- The 3-way mixing valve opens and then regulates to the defaulted set value.
- The circulation pump for cylinder heating cycles (briefly switches on and off) until the set flow temperature has been reached (set DHW temperature  $+5\text{ K}$ ). Then it runs constantly.  
If, during heating, the actual value undershoots the required set temperature, the circulation pump for cylinder heating will temporarily cycle again.

The DHW cylinder is hot:

- Cylinder temperature sensor 1:  
Actual value  $\geq$  set value  
and  
Cylinder temperature sensor 2:  
Actual value  $>$  set value  $-1.5\text{ K}$ :
- The common set flow temperature is returned to the set weather-compensated value.
- The circulation pump for cylinder heating stops immediately when the 3-way mixing valve is fully opened.  
or
- The circulation pump for cylinder heating stops after expiry of the run-on time that is set at code "62".

## Calling up coding level 1


### Note

*Codes that have no function due to the heating system equipment level or the setting of other codes are not displayed.*

The codes are divided into groups:

- 1 **"General"**
- 2 **"Boiler"**
- 6 **"All codes std device"**. In this group, all coding addresses are displayed in ascending order.
- 7 **"Standard setting"**

Service menu:

1. Press **OK** and **≡** simultaneously for approx. 4 s.  
 flashes on the display.
2. Select **①** with **▶** to reach coding level 1. Confirm with **OK**.  
**I** flashes on the display for the coding addresses of group 1.

3. **▲/▼** for the group of the required coding address
4. **▲/▼** for the required coding address
5. **▲/▼** for the required value according to the following tables
6. **↶** to exit coding level 1

### Note

*The system exits the service menu automatically after 30 min.*

## Resetting all codes to their delivered condition

Select **"7"** with **▶** and confirm with **OK**.  
 When **✱** flashes, confirm with **OK**.

### Note

*This also resets codes at coding level 2.*

## Group 1

### Coding

Coding in the delivered condition		Possible change	
System design			
00:1	Without function	00:0	Set automatically if code "01:2" is set. Boiler control unit is linked into the cascade.

**Group 1** (cont.)




Coding in the delivered condition		Possible change	
Servomotor runtime			
40:...	Actuator runtime at plug 52A1 Delivered condition defaulted by boiler coding card.	40:5 to 40:199	Runtime adjustable from 5 to 199 s.
Subscriber no.			
77:1	LON subscriber number	77:1 to 77:99	LON subscriber number, adjustable from 1 to 99

**Group 2****Coding**

Coding in the delivered condition		Possible change	
System design			
01:1	Single boiler system	01:2	Multi boiler system with cascade control via LON
		01:3	Never adjust
Burner type			
02:1	Type GC1B: Two-stage burner	02:0	Single stage burner
		02:2	Modulating burner
Gas/oil operation			
03:0	Type GC1B: Gas operation	03:1	Oil operation (irreversible)
Boiler/burner			
05:...	Type GC1B: Modulating burner: Burner curve Delivered condition defaulted by boiler coding card.	05:0	Linear burner curve
		05:1 to 05:99	Non-linear burner curve ( $P_T : P_{max}$ ) · 100 $P_T$ in kW: Partial output at ⅓ of the actuator runtime $P_{max}$ in kW: Maximum output
Boiler water temperature maximum limit			
06:87	Type GC1B: Set to 87 °C	06:20 to 06:127	Adjustable from 20 to 127 °C Observe the temperature controller settings.



**Group 2 (cont.)**




Coding in the delivered condition		Possible change	
Boiler			
07:1	Consecutive boiler number in multi boiler systems	07:2 to 07:4	Consecutive boiler number in multi boiler systems
Flue gas monitor			
1F:0	Flue gas temperature is not monitored for service indicator	1F:1 to 1F:250	 is displayed if the flue gas temperature limit is exceeded. Limit adjustable from 1 to 250 °C.
Burner service in 100 hours			
21:0	No service interval (hours run) selected.	21:1 to 21:100	The number of hours the burner has run before it should be serviced is adjustable from 100 to 10,000 h 1 step $\triangleq$ 100 h
Service interval in months			
23:0	No service interval set.	23:1 to 23:24	Interval adjustable from 1 to 24 months.
Service status			
24:0	Display does not show 	24:1	 is displayed (the address is automatically set and must be reset manually after a service).










## Calling up coding level 2

**Note**

- All codes are accessible in coding level 2.
- Codes that have no function due to the heating system equipment level or the setting of other codes are not displayed.
- For code groups, see page 119

Service menu:



1. Press **OK** and  simultaneously for approx. 4 s.  
 flashes on the display.
2. Press **OK** and  simultaneously for approx. 4 s.

3. Select  with  to reach coding level 2. Confirm with **OK**.  
**I** flashes on the display for the coding addresses of group 1.
4. / for the group of the required coding address
5. / for the required coding address
6. / for the required value according to the following tables
7.  to exit coding level 2

**Note**

*The system exits the service menu automatically after 30 min.*

## Resetting all codes to their delivered condition

Select "7" with  and confirm with **OK**.  
When  flashes, confirm with **OK**.

**Note**

*This also resets codes at coding level 1.*

## Group 1

### Coding

Coding in the delivered condition		Possible change	
00:1	Without function	00:0	Set automatically if code "01:2" is set. Boiler control unit is linked into the cascade.
30:0	Without plug-in adaptor 1, external safety equipment	30:1	With plug-in adaptor 1, external safety equipment is recognised automatically.
31:0	Without plug-in adaptor 2, external safety equipment	31:1	With plug-in adaptor 2, external safety equipment is recognised automatically.
32:0	Without AM1 extension	32:1	With AM1 extension; recognised automatically.

**Group 1** (cont.)

Coding in the delivered condition		Possible change	
33:1	Function output A1 at AM1 extension: Heating circuit pump	33:3	Circulation pump for neutralising system or flue gas/water heat exchanger
34:0	Function output A2 at AM1 extension: DHW circulation pump	34:3	Circulation pump for neutralising system or flue gas/water heat exchanger
40:...	Actuator runtime at plug <span style="border: 1px solid black; padding: 0 2px;">52</span> A1 Delivered condition defaulted by boiler coding card.	40:5 to 40:199	Runtime adjustable from 5 to 199 s.
4A:0	No sensor <span style="border: 1px solid black; padding: 0 2px;">17</span> <span style="border: 1px solid black; padding: 0 2px;">A</span> installed	4A:1	Sensor <span style="border: 1px solid black; padding: 0 2px;">17</span> <span style="border: 1px solid black; padding: 0 2px;">A</span> installed (e.g. Therm-Control temperature sensor); recognised automatically.
4b:0	No sensor <span style="border: 1px solid black; padding: 0 2px;">17</span> <span style="border: 1px solid black; padding: 0 2px;">B</span> installed	4b:1	Sensor <span style="border: 1px solid black; padding: 0 2px;">17</span> <span style="border: 1px solid black; padding: 0 2px;">B</span> installed (e.g. return temperature sensor); recognised automatically.
4C:2	Connection on plug <span style="border: 1px solid black; padding: 0 2px;">20</span> : Therm-Control contact	4C:1	Never adjust
		4C:3	Circulation pump, flue gas/water heat exchanger
4d:1	Connection on plug <span style="border: 1px solid black; padding: 0 2px;">29</span> : Shunt pump	4d:2	Boiler circuit pump
		4d:3	Boiler circuit pump with motorised butterfly valve function
4E:0	Connection on plug <span style="border: 1px solid black; padding: 0 2px;">52</span> : Motorised butterfly valve	4E:1	Motor for 3-way mixer for return temperature control
		4E:2	Never adjust
4F:5	Run-on time, shunt or boiler circuit pump 5 min.	4F:0	No pump run-on.
		4F:1 to 4F:60	Run-on time adjustable from 1 to 60 min
6C:0	<b>Type GC1B:</b> No run-on time, neutralising system	6C:1 to 6C:255	Run-on time neutralising system at output A1 at AM1 extension, adjustable from 1 to 255 s.
6d:0	<b>Type GC1B:</b> No run-on time, neutralising system	6d:1 to 6d:255	Run-on time neutralising system at output A2 at AM1 extension, adjustable from 1 to 255 s.

**Group 1** (cont.)

Coding in the delivered condition		Possible change	
76:0	Without LON communication module	76:1	With LON communication module; recognised automatically.
77:1	LON subscriber number	77:1 to 77:99	LON subscriber number, adjustable from 1 to 99.
78:1	LON communication enabled.	78:0	LON communication disabled.
79:0	Control unit is not fault manager.	79:1	Control unit is fault manager.
80:6	A fault message is issued if a fault occurs for at least 30 s.	80:0	Immediate fault message
		80:2 to 80:199	Minimum fault duration before a fault message is issued, adjustable from 10 to 995 s. 1 step $\triangleq$ 5 s
88:0	Temperature displayed in °C (Celsius)	88:1	Temperature displayed in °F (Fahrenheit)
8A:175	Never adjust		
8b:0	<b>Type GC4B:</b> Without KM BUS burner control unit	8b:1	With KM BUS burner control unit
93:0	Fault messages during emissions test function/ service indication does not affect central fault messages.	93:1	Fault messages during emissions test function/ service indication affect central fault messages.
98:1	Viessmann system number (in conjunction with monitoring several systems via Vitocom).	98:1 to 98:5	System number adjustable from 1 to 5.
9b:0	Never adjust		
9C:20	Monitoring LON subscribers: When there is no response from a subscriber, values defaulted by the control unit are used after 20 min and a fault message is issued.	9C:0	No monitoring
		9C:5 to 9C:60	Time adjustable from 5 to 60 min.
9d:0	Never adjust		

## Group 2


### Coding

Coding in the delivered condition		Possible change	
01:1	Single boiler system	01:2	Multi boiler system with cascade control via LON
		01:3	Never adjust
02:1	<b>Type GC1B:</b> Two-stage burner	02:0	Single stage burner
		02:2	Modulating burner
03:0	<b>Type GC1B:</b> Gas operation	03:1	Oil operation (irreversible)
		03:2	Set automatically if no boiler coding card or an incorrect boiler coding card is inserted.
04:...	<b>Type GC1B:</b> Switching hysteresis, burner: Delivered condition defaulted by the boiler coding card.	04:0	Switching hysteresis 4 K (see page 98)
		04:1	Switching hysteresis subject to heat demand (see page 98) ERB50 function (values from 6 to 12 K)
		04:2	ERB80 function (values from 6 to 20 K)
05:...	<b>Type GC1B:</b> Modulating burner: Burner curve Delivered condition defaulted by the boiler coding card.	05:0	Linear burner curve
		05:1 to 05:99	Non-linear burner curve ( $P_T : P_{max}$ ): 100 $P_T$ in kW: Partial output at $\frac{1}{3}$ of the actuator runtime $P_{max}$ in kW: Maximum output
06:87	Maximum limit of the boiler water temperature set to 87 °C.	06:20 to 06:127	Maximum limit adjustable from 20 to 127 °C. Observe the temperature controller settings.
07:1	Consecutive boiler number in multi boiler systems	07:2 to 07:4	Consecutive boiler number in multi boiler systems
08:...	<b>Type GC1B:</b> Maximum burner output in kW	08:0 to 08:199	Maximum output adjustable from 0 to 199 kW.





**Group 2** (cont.)

Coding in the delivered condition		Possible change	
	Delivered condition defaulted by the boiler coding card.		
09:...	<b>Type GC1B:</b> Maximum burner output in kW Delivered condition defaulted by the boiler coding card.	09:0 to 09:199	Maximum output adjustable from 0 to 19,900 kW. 1 step $\triangleq$ 100 kW
0A:...	<b>Type GC1B:</b> Burner base output in kW Delivered condition defaulted by the boiler coding card.	0A:0 to 0A:100	Non-linear burner curve ( $P_G:P_{max}$ ): 100 % $P_G$ in kW: Base output $P_{max}$ in kW: Maximum output
0C:5	Motorised butterfly valve modulating independent of the set boiler water temperature	0C:0	Without function
		0C:1	Constant return temperature control
		0C:2	Time-controlled motorised butterfly valve
		0C:3	Motorised butterfly valve switching subject to the set boiler water temperature
		0C:4	Motorised butterfly valve modulating subject to the set boiler water temperature
0d:2	<b>Type GC1B:</b> With Therm-Control; affect the motorised butterfly valve (function disabled with code "0C:1").	0d:0	Without Therm-Control
		0d:1	With Therm-Control, affects the mixers of downstream heating circuits.
13:...	<b>Type GC1B:</b> Shutdown differential in K The burner shuts down when the set boiler water temperature is exceeded.	13:0	Without shutdown differential
		13:2 to	Shutdown differential adjustable from 2 to 20 K.

**Group 2** (cont.)

Coding in the delivered condition		Possible change	
	Delivered condition defaulted by the boiler coding card.	13:20	
14:...	<b>Type GC1B:</b> Minimum burner runtime in min Delivered condition defaulted by the boiler coding card.	14:0 to 14:15	Minimum runtime adjustable from 0 to 15 min.
15:10	<b>Type GC1B:</b> Runtime, actuator, modulating burner 10 s	15:5 to 15:199	Runtime adjustable from 5 to 199 s. For the Vitocrossal, see separate service instructions.
16:...	<b>Type GC1B:</b> Burner offset with start optimisation in K (temporary reduction of the set boiler water temperature after burner start) Delivered condition defaulted by the boiler coding card.	16:0 to 16:15	Offset adjustable from 0 to 15 K.
1A:...	<b>Type GC1B:</b> Start optimisation in minutes Delivered condition defaulted by the boiler coding card.	1A:0 to 1A:60	Duration of start optimisation adjustable from 0 to 60 min.
1b:60	<b>Type GC1B:</b> Time from burner ignition to the start of regulation 60 s	1b:0 to 1b:199	Control delay adjustable from 1 to 199 s.
1C:120	<b>Type GC1B:</b> Signal B4 at plug  not available:	1C:1 to 1C:199	Delay adjustable from 1 to 199 s. This time is deducted from the operating time for every burner start.

**Group 2** (cont.)

Coding in the delivered condition		Possible change	
	Compensation of signal delay for hours run meter. Time from burner start signal initiation at T2 in plug  to opening of the solenoid valve. At each burner start, 120 s will be taken off the runtime.		That is operating situations where the burner is shut down via the mechanical temperature controller, but a burner demand is still present (hours run continue to be counted). If required, change coding address "06".
1F:0	Flue gas temperature is not monitored for service indicator	1F:1 to 1F:250	 is displayed if the set flue gas temperature limit is exceeded. Limit adjustable from 1 to 250 °C.
21:0	No service interval (hours run) selected.	21:1 to 21:100	The number of hours the burner has run before it should be serviced is adjustable from 100 to 10,000 h. 1 step $\triangleq$ 100 h.
23:0	No service interval set.	23:1 to 23:24	Interval adjustable from 1 to 24 months.
24:0	 not displayed.	24:1	 is displayed (the address is set automatically and must be reset manually after a service).
26:0	<b>Type GC1B:</b> Burner fuel consumption (stage 1), no count if "26:0" and "27:0" are programmed.	26:1 to 26:99	Input from 0.1 to 9.9 1 step $\triangleq$ 0.1 l/h or gallons/h  <b>Note</b> <i>Values of coding addresses "26" and "27" are added together.</i>
27:0	<b>Type GC1B:</b> Burner fuel consumption (stage 1), no count if "26:0" and "27:0" are programmed.	27:1 to 27:199	Input from 10 to 1990. 1 step $\triangleq$ 10 l/h or gallons/h



**Group 2** (cont.)

<b>Coding in the delivered condition</b>		<b>Possible change</b>	
28:0	<b>Type GC1B:</b> No burner interval ignition	28:1 to 28:24	Time interval adjustable from 1 to 24 h. Burner is force-started once every 30 s.
29:0	<b>Type GC1B:</b> Burner fuel consumption (stage 1 and 2), no count if "29:0" and "2A:0" are programmed.	29:1 to 29:99	Input from 0.1 to 9.9. 1 step $\triangleq$ 0.1 l/h or gallons/h  <b>Note</b> <i>Values of coding addresses "29" and "2A" are added together.</i>
2A:0	<b>Type GC1B:</b> Burner fuel consumption (stage 1 and 2), no count if "29:0" and "2A:0" are programmed.	2A:1 to 2A:199	Input from 10 to 1990. 1 step $\triangleq$ 10 l/h or gallons/h
2b:5	Maximum preheating time of the motorised butterfly valve 5 min	2b:0	No preheating time
		2b:1 to 2b:60	Preheating time adjustable from 1 to 60 min
2C:5	Maximum run-on time of the motorised butterfly valve 5 min	2C:0	No run-on time
		2C:1 to 2C:60	Run-on time adjustable from 1 to 60 min
2d:0	<b>Type GC1B:</b> Shunt pump control function only ON if the boiler is enabled.	2d:1	Shunt pump control function permanently ON.

# Calling up coding level 1

**Note**

- The codes are displayed as plain text.
- Codes that have no function due to the heating system equipment level or the setting of other codes are not displayed.
- Heating systems with one heating circuit without mixer and one or two heating circuits with mixer:  
The heating circuit without mixer is designated **"Heating circuit 1"** and the heating circuits with mixer as **"Heating circuit 2"** or **"Heating circuit 3"**.  
If the heating circuits were given individual designations, the selected designation and **"HC1"**, **"HC2"** or **"HC3"** appear instead.

The codes are divided into groups:

- **"General"**
- **"Cascade"**
- **"DHW"**
- **"Solar"**

- **"Heating circuit ..."**
- **"All codes std device"**. In this group, all coding addresses are displayed in ascending order.

**Note**

The coding addresses in the **"Solar"** group are not shown.

- **"Standard setting"**

Service menu:

1. Press **OK** and **≡** simultaneously for approx. 4 s.
2. **"Coding level 1"**
3. **▲/▼** for the group of the required coding address
4. **▲/▼** for the required coding address
5. **▲/▼** for the required value according to the following tables

**Note**

The system exits the service menu automatically after 30 min.

## Resetting all codes to their delivered condition

Select **"Standard setting"** in coding level 1.

**Note**

This also resets codes at coding level 2.

### "General" group

## Coding

Coding in the delivered condition		Possible change	
System design			
00:1	One heating circuit without mixer A1 (heating circuit 1), <b>without</b> DHW heating	00:2 to 00:10	For system schemes, see the following table

**"General" group (cont.)**

Value address 00: ...	Description
2	One heating circuit without mixer A1 (heating circuit 1), <b>with</b> DHW heating; recognised automatically.
3	One heating circuit with mixer M2 (heating circuit 2), <b>without</b> DHW heating.
4	One heating circuit with mixer M2 (heating circuit 2), <b>with</b> DHW heating.
5	One heating circuit without mixer A1 (heating circuit 1), one heating circuit with mixer M2 (heating circuit 2), <b>without</b> DHW heating; recognised automatically.
6	One heating circuit without mixer A1 (heating circuit 1), one heating circuit with mixer M2 (heating circuit 2), <b>with</b> DHW heating; recognised automatically.
7	Two heating circuits with mixer M2 (heating circuit 2) and M3 (heating circuit 3), <b>without</b> DHW heating.
8	Two heating circuits with mixer M2 (heating circuit 2) and M3 (heating circuit 3), <b>with</b> DHW heating.
9	One heating circuit without mixer A1 (heating circuit 1), two heating circuits with mixer M2 (heating circuit 2) and M3 (heating circuit 3), <b>without</b> DHW heating; recognised automatically.
10	One heating circuit without mixer A1 (heating circuit 1), two heating circuits with mixer M2 (heating circuit 2) and M3 (heating circuit 3), <b>with</b> DHW heating; recognised automatically.

Coding in the delivered condition		Possible change	
Servomotor runtime			
40:125	Actuator runtime at plug 52A1 125 s	40:5 to 40:199	Runtime adjustable from 5 to 199 s.
Subscriber no.			
77:5	LON subscriber number	77:1 to 77:99	LON subscriber number, adjustable from 1 to 99: 1 to 4 = Boiler control unit 5 = Cascade control unit 10 to 97 = Vitotronic 200-H 98 = Vitogate 99 = Vitocom



**"General" group** (cont.)

Coding in the delivered condition		Possible change	
Detached house/apartment building			
7F:1	Detached house	7F:0	Apartment building Separate adjustment of holiday program and time program for DHW heating possible
General			
8F:0	Operation in standard menu and extended menu enabled  <b>Note</b> <i>The respective code is only activated when you exit the service menu (see page 70).</i>	8F:1	Operation in standard menu <b>and</b> extended menu disabled
		8F:2	Operation in standard menu enabled, disabled in the extended menu
Set flow temperature for external demand			
9b:70	Set flow temperature for external demand 70 °C.	9b:0	No default set value
		9b:1 to 9b:127	Set flow temperature adjustable from 1 to 127 °C.

**"Cascade" group****Coding**

Coding in the delivered condition		Possible change	
Number of boilers in the cascade			
35:4	4 boilers connected to the Vitotronic 300-K	35:1 to 35:4	1 to 4 boilers connected to the Vitotronic 300-K
Min. system flow temperature			
36:0	Electronic minimum system flow temperature limit set to 0 °C.	36:1 to 36:127	Minimum limit adjustable from 0 to 127 °C (only for operation with standard room temperature)

**"Cascade" group** (cont.)

Coding in the delivered condition		Possible change	
Max. system flow temperature			
37:80	Electronic maximum system flow temperature limit set to 80 °C.	37:20 to 37:127	Maximum limit adjustable from 20 to 127 °C  <b>Note</b> <i>Value must be lower than the lowest value of coding address "06" in group 2 of every Vitotronic 100.</i>
Control type			
3b:1	Standalone <b>parallel</b> boiler circuit: With flow temperature sensor (see page 101)	3b:0	Standalone <b>parallel</b> boiler circuit: Without flow temperature sensor (see page 101)
		3b:2	Standalone <b>serial</b> boiler circuit: Without flow temperature sensor (see page 101)
		3b:3	Standalone <b>serial</b> boiler circuit: With flow temperature sensor (see page 101)
		3b:4	Sequential control method with flow temperature sensor (see page 101)
Control strategy			
3C:2	Conventional boiler strategy 2 (see page 104)	3C:0	Condensing strategy (see page 102)
		3C:1	Conventional boiler strategy 1 (see page 104)

**"DHW" group****Coding**

Coding in the delivered condition		Possible change	
DHW			
67:40	For solar DHW heating: Set DHW temperature 40 °C. Reheating is suppressed above the selected set temperature (DHW heating by the boiler only if there is insufficient solar energy).	67:0	No set value 3
		67:10 to 67:95	Set DHW temperature adjustable from 10 to 95 °C (limited by boiler-specific parameters). Observe the setting of coding address "56".
Enable DHW circulation pump			
73:0	DHW circulation pump: ON according to time program	73:1 to 73:6	During the time program ON 1 to 6 x/h for 5 min
		73:7	Permanently ON

**"Solar" group**

Only in conjunction with solar control module, type SM1.

**Coding**

Coding in the delivered condition		Possible change	
Speed control solar circuit pump			
02:0	Solar circuit pump is not speed-controlled.	02:1	Solar circuit pump is speed-controlled with wave packet control.
		02:2	Solar circuit pump is speed-controlled with PWM control.
Cylinder maximum temperature			
08:60	Set DHW temperature (maximum cylinder temperature) 60 °C.	08:10 to 08:90	Set DHW temperature adjustable from 10 to 90 °C.

**"Solar" group (cont.)**

Coding in the delivered condition		Possible change	
Stagnation time reduction			
0A:5	Temperature differential for stagnation time reduction (reduction in the speed of the solar circuit pump to protect system components and heat transfer medium) 5 K.	0A:0	Stagnation time reduction disabled.
		0A:1 to 0A:40	Temperature differential adjustable from 1 to 40 K.
Flow rate solar circuit			
0F:70	Solar circuit flow rate at the maximum pump speed 7 l/min.	0F:1 to 0F:255	Flow rate adjustable from 0.1 to 25.5 l/min; 1 step $\triangleq$ 0.1 l/min.
Extended solar control functions			
20:0	No extended control function enabled.	20:1	Additional function for DHW heating.
		20:2	Differential temperature control 2.
		20:3	Differential temperature control 2 and auxiliary function.
		20:4	Differential temperature control 2 for central heating backup.
		20:5	Thermostat function.
		20:6	Thermostat function and auxiliary function.
		20:7	Solar heating via external heat exchanger without additional temperature sensor.
		20:8	Solar heating via external heat exchanger with additional temperature sensor.
		20:9	Solar heating of two DHW cylinders.

## "Heating circuit ..." group

### Coding

Coding in the delivered condition		Possible change	
Priority DHW heating			
A2:2	Cylinder priority control for heating circuit pump and mixer	A2:0	Without cylinder priority applicable to heating circuit pump and mixer
		A2:1	Cylinder priority only applicable to mixer

### Economy function, outside temperature

A5:5	With heating circuit pump logic function (economy control): heating circuit pump OFF when the outside temperature (AT) is 1 K higher than the set room temperature ( $RT_{set}$ ) $AT > RT_{set} + 1 \text{ K}$	A5:0	Without heating circuit pump logic function
		A5:1 to A5:15	With heating circuit pump logic function: Heating circuit pump OFF, see the following table

Parameter address	With heating circuit pump logic function: Heating circuit pump OFF
<b>A5:...</b>	
1	$AT > RT_{set} + 5 \text{ K}$
2	$AT > RT_{set} + 4 \text{ K}$
3	$AT > RT_{set} + 3 \text{ K}$
4	$AT > RT_{set} + 2 \text{ K}$
5	$AT > RT_{set} + 1 \text{ K}$
6	$AT > RT_{set}$
7	$AT > RT_{set} - 1 \text{ K}$
to	
15	$AT > RT_{set} - 9 \text{ K}$



**"Heating circuit ..." group (cont.)**

Coding in the delivered condition		Possible change	
Extended economy function, mixer			
A7:0	Only for heating circuits with mixer: Without mixer economy function	A7:1	With mixer economy function: Heating circuit pump also OFF: ■ Mixer tries closing for more than 20 min Heating circuit pump ON: ■ Mixer in control mode ■ If there is a risk of frost
Pump idle time, transition reduced mode			
A9:7	With pump idle time (heating circuit pump OFF) Function description on page 108	A9:0	Without pump idle time
	<b>Note</b> <i>The maximum idle time is 10 h.</i>	A9:1 to A9:15	Pump idle time adjustable from 1 to 15. 1: Short idle time 15: Long idle time
Weather-compensated/room temperature hook-up			
b0:0	With remote control: <sup>*1</sup> Heating mode/reduced mode: Weather-compensated	b0:1	Heating mode: Weather-compensated Reduced mode: With room temperature hook-up
		b0:2	Heating mode: With room temperature hook-up Reduced mode: Weather-compensated
		b0:3	Heating mode/reduced mode: With room temperature hook-up

<sup>\*1</sup> Only change the code for the heating circuit without mixer A1 for boilers without lower temperature limit or for the heating circuits with mixer if a remote control is connected to them.

**"Heating circuit ..." group (cont.)**

Coding in the delivered condition		Possible change	
Economy function room temperature			
b5:0	With remote control:*1 Without room temperature-dependent heating circuit pump logic function	b5:1 to b5:8	For heating circuit pump logic function, see the following table

Parameter address b5:...	With heating circuit pump logic function:	
	Heating circuit pump OFF	Heating circuit pump ON
1	$RT_{actual} > RT_{set} + 5\text{ K}$	$RT_{actual} < RT_{set} + 4\text{ K}$
2	$RT_{actual} > RT_{set} + 4\text{ K}$	$RT_{actual} < RT_{set} + 3\text{ K}$
3	$RT_{actual} > RT_{set} + 3\text{ K}$	$RT_{actual} < RT_{set} + 2\text{ K}$
4	$RT_{actual} > RT_{set} + 2\text{ K}$	$RT_{actual} < RT_{set} + 1\text{ K}$
5	$RT_{actual} > RT_{set} + 1\text{ K}$	$RT_{actual} < RT_{set}$
6	$RT_{actual} > RT_{set}$	$RT_{actual} < RT_{set} - 1\text{ K}$
7	$RT_{actual} > RT_{set} - 1\text{ K}$	$RT_{actual} < RT_{set} - 2\text{ K}$
8	$RT_{actual} > RT_{set} - 2\text{ K}$	$RT_{actual} < RT_{set} - 3\text{ K}$

Coding in the delivered condition		Possible change	
Min. flow temperature heating circuit			
C5:20	Electronic flow temperature minimum limit 20 °C (only for operation with standard room temperature)	C5:1 to C5:127	Minimum limit adjustable from 1 to 127 °C (limited by boiler-specific parameters).

<b>Max. flow temperature heating circuit</b>			
C6:75	Electronic maximum flow temperature limit set to 75 °C.	C6:10 to C6:127	Maximum limit adjustable from 10 to 127 °C (limited by boiler-specific parameters).

<sup>\*1</sup> Only change the code for the heating circuit without mixer A1 for boilers without lower temperature limit or for the heating circuits with mixer if a remote control is connected to them.

**"Heating circuit ..." group (cont.)**

Coding in the delivered condition		Possible change	
Heating program changeover			
d5:0	With external operating program changeover (observe setting of coding addresses "5d", "5E", "5F" and "91" in the <b>"General"</b> group). Changeover "Constant central heating with reduced room temperature" or "Standby mode" (subject to set reduced room temperature)	d5:1	Changeover to "Constant operation with standard room temperature"
Ext. operating program changeover to heating circuit			
d8:0	With EA1 extension: No operating program changeover	d8:1	Operating program changeover via input DE1
		d8:2	Operating program changeover via input DE2
		d8:3	Operating program changeover via input DE3
Screed drying			
F1:0	Screed drying disabled	F1:1 to F1:6	Only for heating circuits with mixer: Screed drying adjustable in accordance with 6 selectable temperature:time profiles (see page 108).
		F1:15	Constant flow temperature 20 °C (see page 108)

**"Heating circuit ..." group (cont.)**

Coding in the delivered condition		Possible change	
Party mode time limit			
F2:8	Time limit for party mode or external operating program changeover via pushbutton: 8 h <sup>*2</sup>  <b>Note</b> <i>Observe settings of coding addresses "5d", "5E", "5F" in the "General" group, as well as "d5" and "d8" in the "Heating circuit..." group.</i>	F2:0	No time limit <sup>*2</sup>
		F2:1 to F2:12	Time limit adjustable from 1 to 12 h <sup>*2</sup> .
Start temperature raising			
F8:-5	Temperature limit for terminating reduced mode -5 °C, see example on page 112. Observe the setting of coding address "A3"	F8:+10 to F8:-60	Temperature limit adjustable from +10 to -60 °C.
		F8:-61	Function disabled
End temperature raising			
F9:-14	Temperature limit for raising the set reduced room temperature -14 °C, see example on page 112.	F9:+10 to F9:-60	Limit for raising the set room temperature to the value selected for standard mode, adjustable from +10 to -60 °C.
Set flow temperature increase			
FA:20	Raising the set boiler water or flow temperature by 20 % when changing from operation with reduced room temperature to operation with standard room temperature. See example on page 113.	FA:0 to FA:50	Temperature rise adjustable from 0 to 50 %.

<sup>\*2</sup> Party mode ends **automatically** in the "Heating and DHW" operating program when the system changes over to operation with standard room temperature.

**"Heating circuit ..." group** (cont.)









Coding in the delivered condition		Possible change	
Duration set flow temperature increase			
Fb:30	Duration for raising the set flow temperature (see coding address "FA") 60 min. See example on page 113.	Fb:0 to Fb:150	Duration adjustable from 0 to 300 min. 1 step $\triangleq$ 2 min

## Calling up coding level 2

**Note**

- At coding level 2, all codes are accessible, including the codes at coding level 1.
- Codes that have no function due to the heating system equipment level or the setting of other codes are not displayed.
- Heating systems with one heating circuit without mixer and one or two heating circuits with mixer:  
The heating circuit without mixer is designated **"Heating circuit 1"** and the heating circuits with mixer as **"Heating circuit 2"** or **"Heating circuit 3"**.  
If the heating circuits were given individual designations, the selected designation and **"HC1"**, **"HC2"** or **"HC3"** appear instead.
- For code groups, see page 130.

Service menu:

1. Press **OK** and  simultaneously for approx. 4 s.
2. Press **OK** and  simultaneously for approx. 4 s.
3. **"Coding level 2"**
4. / for the group of the required coding address
5. / for the required coding address
6. / for the required value according to the following tables

**Note**

The system exits the service menu automatically after 30 min.

## Resetting all codes to their delivered condition

Select **"Standard setting"** in coding level 2.

**Note**

This also resets codes at coding level 1.

## "General" group

### Coding

Coding in the delivered condition		Possible change	
00:1	One heating circuit without mixer A1 (heating circuit 1), <b>without</b> DHW heating	00:2 to 00:10	For system schemes, see the following table

**"General" group** (cont.)

Value address 00: ...	Description
2	One heating circuit without mixer A1 (heating circuit 1), <b>with</b> DHW heating; recognised automatically.
3	One heating circuit with mixer M2 (heating circuit 2), <b>without</b> DHW heating.
4	One heating circuit with mixer M2 (heating circuit 2), <b>with</b> DHW heating.
5	One heating circuit without mixer A1 (heating circuit 1), one heating circuit with mixer M2 (heating circuit 2), <b>without</b> DHW heating; recognised automatically.
6	One heating circuit without mixer A1 (heating circuit 1), one heating circuit with mixer M2 (heating circuit 2), <b>with</b> DHW heating; recognised automatically.
7	Two heating circuits with mixer M2 (heating circuit 2) and M3 (heating circuit 3), <b>without</b> DHW heating.
8	Two heating circuits with mixer M2 (heating circuit 2) and M3 (heating circuit 3), <b>with</b> DHW heating.
9	One heating circuit without mixer A1 (heating circuit 1), two heating circuits with mixer M2 (heating circuit 2) and M3 (heating circuit 3), <b>without</b> DHW heating; recognised automatically.
10	One heating circuit without mixer A1 (heating circuit 1), two heating circuits with mixer M2 (heating circuit 2) and M3 (heating circuit 3), <b>with</b> DHW heating; recognised automatically.

Coding in the delivered condition		Possible change	
12:5	With EA1 extension: DHW circulation pump runtime for brief operation: 5 min	12:1 to 12:60	Runtime adjustable from 1 to 60 min
1E:0	With EA1 extension (analogue input 0 – 10 V): Temperature demand from 0 to 100 °C: 1 V $\triangleq$ 10 °C 10 V $\triangleq$ 100 °C	1E:1	Temperature demand from 30 to 120 °C: 1 V $\triangleq$ 30 °C 10 V $\triangleq$ 120 °C
2E:0	Without wireless outside temperature sensor	2E:1	With wireless outside temperature sensor; recognised automatically.



**"General" group** (cont.)

Coding in the delivered condition		Possible change	
		2E:2	Wireless outside temperature sensor not used.
2F:0	Never adjust		
40:125	Actuator runtime at plug [52]A1 125 s	40:5 to 40:199	Runtime adjustable from 5 to 199 s
4A:0	Sensor [17][A] not fitted.	4A:1	Sensor [17][A] fitted (e.g. return temperature sensor T1); recognised automatically.
4b:0	No sensor [17][B] installed	4b:1	Sensor [17][B] installed (e.g. return temperature sensor); recognised automatically.
4C:0	Connection on plug [20]A1: Heating circuit pump	4C:1	Primary pump, cylinder loading system
4d:1	Connection on plug [29]: Shunt pump	4d:0	Distribution pump
4E:1	Connection on plug [52]A1: 3-way mixing valve for return temperature control	4E:2	Motor for 3-way mixing valve, cylinder loading system
4F:5	Run-on time, shunt or distribution pump 5 min	4F:0	No pump run-on
		4F:1 to 4F:60	Run-on time adjustable from 1 to 60 min
54:0	Without solar thermal system	54:1	With Vitosolic 100; recognised automatically.
		54:2	With Vitosolic 200; recognised automatically.
		54:3	With solar control module, type SM1, without auxiliary function; recognised automatically.
		54:4	With solar control module, type SM1, with auxiliary function, e.g. central heating backup; recognised automatically.



**"General" group (cont.)**

Coding in the delivered condition		Possible change	
5b:0	Without EA1 extension	5b:1	With EA1 extension; recognised automatically.
5C:0	Function output <span style="border: 1px solid black; padding: 0 2px;">157</span> at EA1 extension: Central fault message	5C:1	Feed pump
		5C:2	Without function
		5C:3	Heating circuit pump A1 is switched to low speed (reduced mode).
		5C:4	Heating circuit pump M2 is switched to low speed (reduced mode).
		5C:5	Heating circuit pump M3 is switched to low speed (reduced mode).
5d:0	Function input DE1 at EA1 extension: Without function	5d:1	Heating program change-over
		5d:2	External demand with minimum set flow temperature Selection of set value in coding address "9b" in the <b>"General"</b> group
		5d:3	External blocking
		5d:4	External blocking with central fault messages
		5d:5	Fault message input
		5d:6	Brief operation, DHW circulation pump (pushbutton function) Selection of set DHW circulation pump runtime in coding address "12" in the <b>"General"</b> group
5E:0	Function input DE2 at EA1 extension: Without function	5E:1	Heating program change-over
		5E:2	External demand with minimum set flow temperature Selection of set value in coding address "9b" in the <b>"General"</b> group
		5E:3	External blocking
		5E:4	External blocking with central fault messages

**"General" group** (cont.)

Coding in the delivered condition		Possible change	
5F:0	Function input DE3 at EA1 extension: Without function	5E:5	Fault message input
		5E:6	Brief operation, DHW circulation pump (pushbutton function) Selection of DHW circulation pump runtime setting in coding address "12" in the <b>"General"</b> group
		5F:1	Heating program change-over
		5F:2	External demand with minimum set flow temperature Selection of set value in coding address "9b" in the <b>"General"</b> group
		5F:3	External blocking
		5F:4	External blocking with central fault messages
6E:50	No display correction for outside temperature	5F:5	Fault message input
		5F:6	Brief operation, DHW circulation pump (pushbutton function) Selection of DHW circulation pump runtime setting in coding address "12" in the <b>"General"</b> group
		6E:0 to 6E:49	Display correction -5 K to Display correction -0.1 K
		6E:51 to 6E:99	Display correction +0.1 K to Display correction +4.9 K
76:0	Without LON communication module	76:1	With LON communication module; recognised automatically.
77:5	LON subscriber number	77:1 to 77:99	LON subscriber number, adjustable from 1 to 99: 1 to 4 = Boiler control unit 5 = Cascade control unit 10 to 97 = Vitotronic 200-H

**"General" group (cont.)**

Coding in the delivered condition		Possible change	
			98 = Vitogate 99 = Vitocom
78:1	LON communication enabled	78:0	LON communication disabled
79:1	With LON communication module: Control unit is fault manager	79:0	Control unit is not fault manager
7A:0	Without central control of heating circuits	7A:1	With central operation (see page 111): Heating circuit without mixer A1 (heating circuit 1)
		7A:2	Heating circuit with mixer M2 (heating circuit 2)
		7A:3	Heating circuit with mixer M3 (heating circuit 3)
7b:1	With LON communication module: Control unit transmits the time.	7b:0	Does not transmit time
7F:1	Detached house	7F:0	Apartment building Separate adjustment of holiday program and time program for DHW heating possible
80:6	A fault message is issued if a fault occurs for at least 30 s.	80:0	A fault message is issued without delay.
		80:2 to 80:199	Minimum fault duration before a fault message is issued, adjustable from 10 to 995 s. 1 step $\triangleq$ 5 s
81:1	Automatic summer/winter-time changeover	81:0	Manual summer/winter-time changeover
		81:2	Use of radio clock receiver; recognised automatically.
		81:3	With LON communication module: The control unit receives the time.
82:3	Summer time starts: March	82:1 to	January to December

**"General" group** (cont.)

Coding in the delivered condition		Possible change	
		82:12	
83:5	Summer time starts: Week 5 of the selected month	83:1 to 83:5	Week 1 to week 5 of the selected month
84:7	Summer time starts: Last Sunday of the selected month	84:1 to 84:7	Monday to Sunday
85:10	Wintertime starts: October	85:1 to 85:12	January to December
86:5	Wintertime starts: Week 5 of the selected month	86:1 to 86:5	Week 1 to week 5 of the selected month
87:7	Summer time starts: Last Sunday of the selected month	87:1 to 87:7	Monday to Sunday
88:0	Temperature displayed in °C (Celsius)	88:1	Temperature displayed in °F (Fahrenheit)
8A:175	Never adjust		
8F:0	Operation in the standard menu and extended menu enabled.  <b>Note</b> <i>The respective code is only activated when you exit the service menu (see page 70).</i>	8F:1	Operation in the standard menu <b>and</b> extended menu blocked.
		8F:2	Operation enabled in the standard menu; blocked in the extended menu.
90:128	Time constant for calculating adjusted outside temperature 21.3 h	90:1 to 90:199	Fast (low values) or slow (high values) adjusting of the flow temperature, subject to the set value when the outside temperature changes. 1 step $\pm$ 10 min
91:0	Connection at terminals 1 and 2 in plug <span style="border: 1px solid black; padding: 0 2px;">143</span> disabled (external operating program changeover) (see page 42).	91:1	Contact affects the following heating circuits: Heating circuit without mixer A1 (heating circuit 1)

**"General" group** (cont.)

Coding in the delivered condition		Possible change	
		91:2	Heating circuit with mixer M2 (heating circuit 2)
		91:3	Heating circuit without mixer A1 (heating circuit 1) and heating circuit with mixer M2 (heating circuit 2)
		91:4	Heating circuit with mixer M3 (heating circuit 3)
		91:5	Heating circuit without mixer A1 (heating circuit 1) and heating circuit with mixer M3 (heating circuit 3)
		91:6	Heating circuit with mixer M2 (heating circuit 2) and M3 (heating circuit 3)
		91:7	Heating circuit without mixer A1 (heating circuit 1) and heating circuits with mixer M2 (heating circuit 2) and M3 (heating circuit 3)
96:1	With extension for heating circuits 2 and 3 with mixer	96:0	Without extension for heating circuits 2 and 3 with mixer
97:2	With LON communication module: The control unit transmits the outside temperature to the Vitotronic 200-H	97:0	The outside temperature of the sensor connected to the control unit is only utilised internally.
		97:1	The control unit receives the outside temperature from the Vitotronic 200-H.
98:1	With LON communication module: Viessmann system number (in conjunction with monitoring several systems via Vitocom).	98:1 to 98:5	System number adjustable from 1 to 5.
99:0	Connection at terminals 2 and 3 in plug 143 disabled (external blocking/ external "Close mixer") (see page 42).	99:1	Without function
		99:2	External "Mixer close" Heating circuit with mixer M2 (heating circuit 2)
		99:3	Without function

**"General" group** (cont.)

Coding in the delivered condition		Possible change	
		99:4	External "Mixer close" Heating circuit with mixer M3 (heating circuit 3)
		99:5	Without function
		99:6	External "Mixer close" Heating circuit with mixer M2 (heating circuit 2) and M3 (heating circuit 3)
		99:7	Without function
		99:8	External blocking
		99:9	Without function
		99:10	External blocking/External "Close mixer" Heating circuit with mixer M2 (heating circuit 2) and M3 (heating circuit 3)
		99:11	Without function
		99:12	External blocking/External "Close mixer" Heating circuit with mixer M3 (heating circuit 3)
		99:13	Without function
		99:14	External blocking/External "Close mixer" Heating circuit with mixer M2 (heating circuit 2) and M3 (heating circuit 3)
		99:15	Without function
		9A:0	Connection at terminals 1 and 2 in plug 143 disabled (external "Open mixer") (see page 42).
		9A:1	Without function
		9A:2	External "Mixer open" Heating circuit with mixer M2 (heating circuit 2)
		9A:3	Without function
		9A:4	External "Mixer open" Heating circuit with mixer M3 (heating circuit 3)
		9A:5	Without function
		9A:6	External "Mixer open" Heating circuit with mixer M2 (heating circuit 2) and M3 (heating circuit 3)

**"General" group (cont.)**

Coding in the delivered condition		Possible change	
9b:70	Set flow temperature for external demand 70 °C	9A:7	Without function
		9b:0	No default set value
		9b:1 to 9b:127	Set flow temperature adjustable from 1 to 127 °C
9C:20	With LON communication module: Monitoring LON subscribers The values specified inside the control unit are used if there is no response from a subscriber after 20 min. Only then will a fault message be issued.	9C:0	No monitoring
		9C:5 to 9C:60	Time adjustable from 5 to 60 min.
9F:8	Differential temperature 8 K; only in conjunction with heating circuits with mixer M2 and M3	9F:0 to 9F:40	Differential temperature adjustable from 0 to 40 K.

**"Cascade" group****Coding**

Coding in the delivered condition		Possible change	
35:4	4 boilers connected to the Vitotronic 300-K.	35:1 to 35:4	1 to 4 boilers connected to the Vitotronic 300-K.
36:0	Electronic minimum system flow temperature limit set to 0 °C	36:1 to 36:127	Minimum limit adjustable from 0 to 127 °C (only for operation with standard room temperature).
37:80	Electronic maximum system flow temperature limit set to 80 °C.	37:20 to 37:127	Maximum limit adjustable from 20 to 127 °C.

**"Cascade" group** (cont.)

Coding in the delivered condition		Possible change	
			<b>Note</b> <i>Value must be lower than the lowest value of coding address "06" in group 2 of every Vitotronic 100.</i>
38:0	No lead boiler or boiler sequence changeover; see function description in chapter "Cascade control"	38:1	Lead boiler changeover: Every first day of the month, the boiler the burner of which has run the shortest number of hours becomes the lead boiler.
		38:2 to 38:200	Lead boiler changeover after 200 to 20,000 hours run 1 step $\triangleq$ 100 hours run
39:0	No permanent lead boiler	39:1 to 39:4	Boiler 1, 2, 3 or 4 is permanent lead boiler
3A:0	No permanent last boiler	3A:1 to 3A:4	Boiler 1, 2, 3 or 4 is permanently last boiler
3b:1	Standalone <b>parallel</b> boiler circuit: With flow temperature sensor (see page 101)	3b:0	Standalone <b>parallel</b> boiler circuit: Without flow temperature sensor (see page 101)
		3b:2	Standalone <b>serial</b> boiler circuit: Without flow temperature sensor (see page 101)
		3b:3	Standalone <b>serial</b> boiler circuit: With flow temperature sensor (see page 101)
		3b:4	Sequential control method with flow temperature sensor (see page 101)
3C:2	Conventional boiler strategy 2 (see page 106)	3C:0	Condensing strategy (see page 102)
		3C:1	Conventional boiler strategy 1 (see page 105)



**"Cascade" group** (cont.)

Coding in the delivered condition		Possible change	
3d:1	Output statement for condensing strategy and conventional boiler strategy 1	3d:0	No output statement  <b>Note</b> <i>Vitotronic 300-K regulates only to conventional boiler strategy 2.</i>
3E:0	Distribution pump will only run if there is a heat demand.	3E:1	Distribution pump always runs; shutdown through "External blocking" signal.
3F:0	Without cylinder priority control for distribution pump	3F:1	With cylinder priority control for distribution pump
41:31	No ECO threshold boiler 1	41:-30 to 41:+30	ECO threshold boiler 1; adjustable from -30 to +30 °C.
42:31	No ECO threshold boiler 2	42:-30 to 42:+30	ECO threshold boiler 2; adjustable from -30 to +30 °C.
43:31	No ECO threshold boiler 3	43:-30 to 43:+30	ECO threshold boiler 3; adjustable from -30 to +30 °C.
44:31	No ECO threshold boiler 4	44:-30 to 44:+30	ECO threshold boiler 4; adjustable from -30 to +30 °C.
45:60	Start integral threshold set to 60 K x minute.	45:1 to 45:255	Start integral threshold adjustable from 1 to 255 K x minute.  <b>Note</b> <i>A boiler or burner stage will shut down if this value is exceeded.</i>
46:40	Stop integral threshold set to 40 K x minute.	46:1 to 46:255	Stop integral threshold adjustable from 1 to 255 K x minute.

**"Cascade" group** (cont.)

Coding in the delivered condition		Possible change	
			<b>Note</b> A boiler or burner stage will shut down if this value is exceeded.
47:15	Stop differential set to 15 K.	47:2 to 47:30	Stop differential adjustable from 2 to 30 K.  <b>Note</b> One boiler or one burner stage will be shut down if the actual flow temperature exceeds the set flow temperature by this value.
48:35	Never adjust		
49:40	Never adjust		

**"DHW" group****Coding**

Coding in the delivered condition		Possible change	
55:0	Cylinder heating, hysteresis $\pm 2.5$ K	55:1	Adaptive cylinder heating enabled (see page 117)
		55:2	Cylinder temperature control with 2 cylinder temperature sensors (see page 118)
		55:3	Cylinder temperature control, cylinder loading system (see page 118)
56:0	Set DHW temperature adjustable from 10 to 60 °C.	56:1	Set DHW temperature adjustable from 10 to 95 °C.

**"DHW" group (cont.)**

Coding in the delivered condition		Possible change	
			<b>Note</b> <i>Observe the max. permissible DHW temperature. Change over temperature controller "C".</i>
58:0	Without auxiliary function for DHW heating	58:10 to 58:60	Input of a second set DHW temperature, adjustable from 10 to 95 °C (observe coding address "56").
59:0	Cylinder heating: Set start point -2.5 K Set stop point +2.5 K	59:1 to 59:10	Start point adjustable from 1 to 10 K below set value.
5A:0	For DHW heating: The set flow temperature is determined by the highest system flow temperature demand. Scan the temperature in the <b>"Diagnosis"</b> menu, <b>"General"</b> ( <b>"Common dem. temp"</b> ), see page 70.	5A:1	For DHW heating: The set flow temperature is determined by the DHW cylinder flow temperature demand. Scan the temperature in the <b>"Diagnosis"</b> menu, <b>"General"</b> ( <b>"Common dem. temp"</b> ), see page 70.
60:20	During DHW heating, the boiler water temperature is up to 20 K higher than the set DHW temperature.	60:10 to 60:50	Differential between common flow temperature and set DHW temperature adjustable from 10 to 50 K.
61:1	The circulation pump for cylinder heating starts immediately.	61:0	The circulation pump for cylinder heating starts depending on the boiler water temperature.
62:10	Circulation pump with a run-on time of up to 10 min after cylinder heating	62:0	No circulation pump run-on
		62:1 to 62:15	Run-on time adjustable from 1 to 15 min.

**"DHW" group (cont.)**

<b>Coding in the delivered condition</b>		<b>Possible change</b>	
64:2	In party mode and after external changeover to constant operation with the standard room temperature: Constant DHW heating enabled and DHW circulation pump ON.	64:0	No DHW heating DHW circulation pump switched off
		64:1	DHW heating and DHW circulation pump according to time program
66:4	Input of the set DHW temperature: At the programming unit of the control unit and all installed Vitotrol 300 remote control units.	66:0	At the programming unit of the control unit
		66:1	At the programming unit of the control unit and remote control unit of the heating circuit without mixer A1 (heating circuit 1)
		66:2	At the programming unit of the control unit and remote control unit of the heating circuit with mixer M2 (heating circuit 2)
		66:3	At the programming unit of the control unit and remote control unit of the heating circuit with mixer M3 (heating circuit 3)
		66:5	At the remote control of the heating circuit without mixer A1 (heating circuit 1)
		66:6	At the remote control of the heating circuit with mixer M2 (heating circuit 2)
		66:7	At the remote control of the heating circuit with mixer M3 (heating circuit 3)
67:40	For solar DHW heating:	67:0	No set value 3
		67:10 to	Set DHW temperature adjustable from 10 to 95 °C (limited by boiler-specific parameters).

**"DHW" group (cont.)**

<b>Coding in the delivered condition</b>		<b>Possible change</b>	
	Set DHW temperature 40 °C. Reheating is suppressed above the selected set temperature (DHW heating by the boiler only if there is insufficient solar energy).	67:95	Observe the setting of coding address "56".
68:8	With 2 cylinder temperature sensors (code "55:2"): Cylinder heating stop point at set value x 0.8	68:2 to 68:10	Factor adjustable from 0.2 to 1. 1 step $\pm$ 0.1
69:7	With 2 cylinder temperature sensors (code "55:2"): Cylinder heating start point at set value x 0.7	69:1 to 69:9	Factor adjustable from 0.1 to 0.9. 1 step $\pm$ 0.1
6A:75	Runtime, actuator, mixing valve, heat exchanger set, Vitotrans 222, (80 and 120 kW): 75 s	6A:10 to 6A:255	For heat exchanger set Vitotrans 222 (240 kW): set 113 s. Runtime adjustable from 10 to 255 s.
70:0	DHW circulation pump ON according to time program when DHW heating is enabled.	70:1	DHW circulation pump ON according to time program.
71:0	DHW circulation pump: ON according to time program.	71:1	OFF during DHW heating to set value 1.
		71:2	ON during DHW heating to set value 1.
72:0	DHW circulation pump: ON according to time program.	72:1	OFF during DHW heating to set value 2.
		72:2	ON during DHW heating to set value 2.
73:0	DHW circulation pump: ON according to time program.	73:1 to 73:6	During the time program ON 1 to 6 x/h for 5 min.
		73:7	Permanently ON.
75:0	DHW circulation pump ON in economy mode according to time program.	75:1	DHW circulation pump OFF in economy mode.

## "Solar" group

Only in conjunction with solar control module, type SM1

### Coding

Coding in the delivered condition		Possible change	
00:8	Start temperature differential for solar circuit pump 8 K	00:2 to 00:30	Start temperature differential adjustable from 2 to 30 K
01:4	Stop temperature differential for solar circuit pump 4 K	01:1 to 01:29	Stop temperature differential adjustable from 1 to 29 K
02:0	Solar circuit pump not speed-controlled	02:1	Variable speed solar circuit pump with wave packet control
		02:2	Solar circuit pump speed-controlled with PWM control
03:10	Temperature differential for the start of speed control 10 K	03:5 to 03:20	Temperature differential adjustable from 5 to 20 K
04:4	Controller amplification of the speed control 4 %/K	04:1 to 04:10	Controller amplification adjustable from 1 to 10 %/K
05:10	Minimum solar circuit pump speed 10 % of maximum speed	05:2 to 05:100	Minimum solar circuit pump speed adjustable from 2 to 100 %
06:75	Maximum solar circuit pump speed 75 % of maximum possible speed	06:1 to 06:100	Maximum solar circuit pump speed adjustable from 1 to 100 %
07:0	Solar circuit pump interval function OFF	07:1	Solar circuit pump interval function ON The solar circuit pump starts for short cycles to capture the collector temperature more accurately.
08:60	Set DHW temperature (maximum cylinder temperature) 60 °C	08:10 to 08:90	Set DHW temperature adjustable from 10 to 90 °C.

**"Solar" group (cont.)**

<b>Coding in the delivered condition</b>		<b>Possible change</b>	
09:130	Maximum collector temperature (to protect system components) 130 °C	09:20 to 09:200	Temperature adjustable from 20 to 200 °C.
0A:5	Temperature differential for reducing the stagnation time (reduction in solar circuit pump speed to protect system components and heat transfer medium) 5 K	0A:0	Stagnation time reduction disabled
		0A:1 to 0A:40	Temperature differential adjustable from 1 to 40 K
0b:0	Frost protection function for solar circuit OFF	0b:1	Frost protection function for solar circuit ON (not required with Viessmann heat transfer medium)
0C:1	Delta-T monitoring ON No flow rate captured in the solar circuit, or flow rate too low.	0C:0	Delta-T monitoring OFF
0d:1	Night circulation monitoring ON Unintentional flow in the solar circuit is captured (e.g. at night).	0d:0	Night circulation monitoring OFF
0E:1	Heat statement in conjunction with Viessmann heat transfer medium	0E:2	Never adjust
		0E:0	No heat statement
0F:70	Solar circuit flow rate at maximum pump speed 7 l/min	0F:1 to 0F:255	Flow rate adjustable from 0.1 to 25.5 l/min. 1 step $\approx$ 0.1 l/min
10:0	Target temperature control OFF (see coding address "11")	10:1	Target temperature control ON
11:50	Set solar DHW temperature 50 °C	11:10 to 11:90	Set solar DHW temperature adjustable from 10 to 90 °C.

**"Solar" group (cont.)**

Coding in the delivered condition		Possible change	
	<ul style="list-style-type: none"> <li>■ Target temperature control ON (code "10:1"): Temperature at which the solar heated water in the DHW cylinder is to be stratified.</li> <li>■ Code "20:9" (heating of two DHW cylinders) selected: When one DHW cylinder reaches its set DHW temperature, the second DHW cylinder is heated.</li> </ul>		
12:20	Minimum collector temperature (minimum solar circuit pump start temperature) 20 °C	12:0	No minimum limit enabled
		12:1 to 12:90	Minimum collector temperature adjustable from 1 to 90 °C.
20:0	No extended control functions enabled	20:1	Auxiliary function for DHW heating
		20:2	Differential temperature control 2
		20:3	Differential temperature control 2 and auxiliary function
		20:4	Differential temperature control 2 for central heating backup
		20:5	Thermostat function
		20:6	Thermostat function and auxiliary function
		20:7	Solar heating via external heat exchanger without additional temperature sensor
		20:8	Solar heating via external heat exchanger with additional temperature sensor
		20:9	Solar heating of two DHW cylinders



**"Solar" group** (cont.)

Coding in the delivered condition		Possible change	
22:8	Start temperature differential with central heating backup "8 K" (code 20:4 must be set)	22:2 to 22:30	Start temperature differential adjustable from 2 to 30 K
23:4	Stop temperature differential with central heating backup "4 K" (code 20:4 must be set)	23:2 to 23:30	Stop temperature differential adjustable from 1 to 29 K
24:40	Start temperature differential for thermostat function "40 °C" (code 20:5 or "20:6" must be set)	24:0 to 24:100	Start temperature for thermostat function adjustable from 0 to 100 K.
25:50	Stop temperature differential for thermostat function "50 °C" (code 20:5 or "20:6" must be set)	25:0 to 25:100	Stop temperature for thermostat function adjustable from 0 to 100 K.
26:1	Priority for DHW cylinder 1 <b>with</b> cyclical heating (code "20:9" must be set)	26:0	Priority for DHW cylinder 1 <b>without</b> cyclical heating
		26:2	Priority for DHW cylinder 2 <b>without</b> cyclical heating
		26:3	Priority for DHW cylinder 2 <b>with</b> cyclical heating
		26:4	Cyclical heating without priority for one of the DHW cylinders
27:15	Cyclical heating duration 15 min The DHW cylinder without priority is heated at most for the duration of the set cyclical heating time if the DHW cylinder with priority is heated up.	27:5 to 27:60	The cyclical heating time is adjustable from 5 to 60 min.
28:3	Cyclical pause duration 3 min	28:1 to 28:60	Cyclical pause time adjustable from 1 to 60 min.

**"Solar" group (cont.)**

Coding in the delivered condition		Possible change	
	After the selected cyclical heating time for the DHW cylinder without priority has expired, the rise in collector temperature is captured during the cyclical pause time.		

**"Heating circuit ..." group****Coding**

Coding in the delivered condition		Possible change	
A0:0	Without remote control	A0:1	With Vitotrol 200, recognised automatically.
		A0:2	With Vitotrol 300 or Vitohome 300; recognised automatically.
A1:0	Only with Vitotrol 200: All possible settings at the remote control can be accessed.	A1:1	Only party mode can be set at the remote control.
A2:2	Cylinder priority control for heating circuit pump and mixer	A2:0	Without cylinder priority applicable to heating circuit pump and mixer
		A2:1	Cylinder priority only applicable to mixer
A3:2	Outside temperature below 1 °C: Heating circuit pump ON Outside temperature above 3 °C: Heating circuit pump OFF	A3:-9 to A3:15	Heating circuit pump ON/OFF (see the following table)

**Please note**

If a value below 1 °C is selected, there is a risk that pipes outside the thermal envelope of the house could freeze up.

Standby mode in particular should be taken into consideration, e.g. during holidays.

**"Heating circuit ..." group (cont.)**

Parameter Address A3:...	Heating circuit pump	
	ON	OFF
-9	-10 °C	-8 °C
-8	-9 °C	-7 °C
-7	-8 °C	-6 °C
-6	-7 °C	-5 °C
-5	-6 °C	-4 °C
-4	-5 °C	-3 °C
-3	-4 °C	-2 °C
-2	-3 °C	-1 °C
-1	-2 °C	0 °C
0	-1 °C	1 °C
1	0 °C	2 °C
2	1 °C	3 °C
to	to	to
15	14 °C	16 °C

Coding in the delivered condition		Possible change	
A4:0	With frost protection	A4:1	No frost protection; this setting is only possible if code "A3:-9" has been set.
			<b>!</b> <b>Please note</b> Observe information on coding address "A3".
A5:5	With heating circuit pump logic function (economy control): heating circuit pump OFF when the outside temperature (AT) is 1 K higher than the set room temperature ( $RT_{set}$ ) $AT > RT_{set} + 1 \text{ K}$ .	A5:0	Without heating circuit pump logic function
		A5:1 to A5:15	With heating circuit pump logic function: Heating circuit pump OFF, see the following table



Parameter address A5:...	With heating circuit pump logic function: Heating circuit pump OFF
1	$AT > RT_{set} + 5 \text{ K}$
2	$AT > RT_{set} + 4 \text{ K}$

**"Heating circuit ..." group (cont.)**

Parameter address A5:...	With heating circuit pump logic function: Heating circuit pump OFF
3	$AT > RT_{\text{set}} + 3 \text{ K}$
4	$AT > RT_{\text{set}} + 2 \text{ K}$
5	$AT > RT_{\text{set}} + 1 \text{ K}$
6	$AT > RT_{\text{set}}$
7	$AT > RT_{\text{set}} - 1 \text{ K}$
to	
15	$AT > RT_{\text{set}} - 9 \text{ K}$

Coding in the delivered condition		Possible change	
A6:36	Extended economy mode disabled	A6:5 to A6:35	Extended economy mode enabled. This means the burner and heating circuit pump will stop and the mixer will be closed at a variable value, adjustable between 5 and 35 °C plus 1 °C. The base value is the adjusted outside temperature. This value is based on the actual outside temperature and a time constant, which takes the cooling down of an average building into consideration.
A7:0	Only for heating circuits with mixer: Without mixer economy function	A7:1	With mixer economy function (extended heating circuit pump logic): Heating circuit pump also OFF: <ul style="list-style-type: none"> <li>■ If the mixer has been trying to close for longer than 12 min.</li> </ul> Heating circuit pump ON: <ul style="list-style-type: none"> <li>■ If the mixer changes to control function.</li> <li>■ If there is a risk of frost.</li> </ul>
A9:7	With pump idle time (heating circuit pump OFF)	A9:0	Without pump idle time
		A9:1 to A9:15	Pump idle time adjustable from 1 to 15. 1: Short idle time

**"Heating circuit ..." group (cont.)**

Coding in the delivered condition		Possible change	
	(see function description on page 108).  <b>Note</b> <i>The maximum idle time is 10 h</i>		15: Long idle time
AA:2	With output reduction through temperature sensor  	AA:0	Without output reduction
		AA:1	Without function
b0:0	With remote control: <sup>*1</sup> Heating mode/reduced mode: Weather-compensated	b0:1	Heating mode: Weather-compensated Reduced mode: With room temperature hook-up
		b0:2	Heating mode: With room temperature hook-up Reduced mode: Weather-compensated
		b0:3	Heating mode/reduced mode: With room temperature hook-up
b2:8	With remote control and for the heating circuit, operation with room temperature hook-up must be programmed: <sup>*1</sup> Room influence factor 8	b2:0	Without room influence
		b2:1 to b2:31	Room influence factor adjustable from 1 to 31.
b5:0	With remote control: <sup>*1</sup> No room temperature-dependent heating circuit pump logic function.	b5:1 to b5:8	Heating circuit pump logic function, see the following table.

Parameter address b5:...	With heating circuit pump logic function:	
	Heating circuit pump OFF	Heating circuit pump ON
1	$RT_{actual} > RT_{set} + 5 \text{ K}$	$RT_{actual} < RT_{set} + 4 \text{ K}$
2	$RT_{actual} > RT_{set} + 4 \text{ K}$	$RT_{actual} < RT_{set} + 3 \text{ K}$
3	$RT_{actual} > RT_{set} + 3 \text{ K}$	$RT_{actual} < RT_{set} + 2 \text{ K}$
4	$RT_{actual} > RT_{set} + 2 \text{ K}$	$RT_{actual} < RT_{set} + 1 \text{ K}$

<sup>\*1</sup> Only change the code for the heating circuit without mixer A1 for boilers without lower temperature limit or for the heating circuits with mixer if a remote control is connected to them.

**"Heating circuit ..." group (cont.)**

Parameter address b5:...	With heating circuit pump logic function:	
	Heating circuit pump OFF	Heating circuit pump ON
5	$RT_{actual} > RT_{set} + 1\text{ K}$	$RT_{actual} < RT_{set}$
6	$RT_{actual} > RT_{set}$	$RT_{actual} < RT_{set} - 1\text{ K}$
7	$RT_{actual} > RT_{set} - 1\text{ K}$	$RT_{actual} < RT_{set} - 2\text{ K}$
8	$RT_{actual} > RT_{set} - 2\text{ K}$	$RT_{actual} < RT_{set} - 3\text{ K}$

Coding in the delivered condition		Possible change	
b6:0	With remote control: <sup>*1</sup> Without quick heat-up/ quick setback	b6:1	With quick heat-up/quick setback (see function de- scription on page 107)
b7:0	With remote control and for the heating circuit, op- eration with room temper- ature hook-up must be programmed: <sup>*1</sup> Without start optimisa- tion	b7:1	With start optimisation, max. heat-up time offset 2 h 30 min
		b7:2	With start optimisation, max. heat-up time offset 15 h 50 min
b8:10	With remote control and for the heating circuit, op- eration with room temper- ature hook-up must be programmed: <sup>*1</sup> Heat-up gradient start op- timisation 10 min/K	b8:11 to b8:255	Heat-up gradient adjusta- ble from 11 to 255 min/K.
b9:0	With remote control and for the heating circuit, op- eration with room temper- ature hook-up must be programmed: <sup>*1</sup> Without learning start op- timisation	b9:1	With learning start optimi- sation
C0:0	With remote control: <sup>*1</sup> Without shutdown time optimisation	C0:1	With stop optimisation, max. setback time offset 1 h
		C0:2	With stop optimisation, max. setback time offset 2 h

<sup>\*1</sup> Only change the code for the heating circuit without mixer A1 for boilers without lower temperature limit or for the heating circuits with mixer if a remote control is connected to them.

**"Heating circuit ..." group (cont.)**

<b>Coding in the delivered condition</b>		<b>Possible change</b>	
C1:0	With remote control: <sup>*1</sup> Without shutdown time optimisation	C1:1 to C1:12	With stop optimisation of setback time offset adjustable from 10 to 120 min. 1 step $\triangleq$ 10 min
C2:0	With remote control: <sup>*1</sup> Without learning shutdown time optimisation	C2:1	With learning shutdown time optimisation
C3:125	Only for heating circuits with mixer: Mixer runtime 125 s	C3:10 to C3:255	Runtime adjustable from 10 to 255 s.
C4:1	System dynamics: Mixer control characteristics	C4:0 to C4:3	Controller responds too quickly (cycles between "Open" and "Close"): Select a lower value. Controller responds too slowly (temperature is not held sufficiently): select a higher value.
C5:20	Electronic minimum flow temperature limit set to 20 °C (only for operation with standard room temperature)	C5:1 to C5:127	Minimum limit adjustable from 1 to 127 °C.
C6:75	Electronic maximum flow temperature limit set to 75 °C	C6:10 to C6:127	Maximum limit adjustable from 10 to 127 °C.
C8:31	With remote control and for the heating circuit, operation with room temperature hook-up must be programmed: <sup>*1</sup> No room influence limit	C8:1 to C8:30	Room influence limit adjustable from 1 to 30 K.
d5:0	With external operating program changeover (observe setting of coding address "5d", "5E" and "5F" and "91" in the "General" group):	d5:1	The operating program switches to "Constant operation with standard room temperature".

<sup>\*1</sup> Only change the code for the heating circuit without mixer A1 for boilers without lower temperature limit or for the heating circuits with mixer if a remote control is connected to them.

**"Heating circuit ..." group (cont.)**

Coding in the delivered condition		Possible change	
	Operating program changeover to "Constant central heating with reduced room temperature" or "Standby mode" (subject to the settings of the set reduced room temperature).		
d8:0	With EA1 extension: No operating program changeover	d8:1	Operating program changeover via input DE1
		d8:2	Operating program changeover via input DE2
		d8:3	Operating program changeover via input DE3
E1:1	With remote control: Set day temperature adjustable at the remote control unit from 10 to 30 °C.	E1:0	Set day temperature adjustable from 3 to 23 °C.
		E1:2	Set day temperature adjustable from 17 to 37 °C.
E2:50	With remote control: No display correction of the actual room temperature	E2:0 to E2:49	Display correction -5 K to Display correction -0.1 K
		E2:51 to E2:99	Display correction +0.1 K to Display correction +4.9 K
F1:0	Screed drying disabled	F1:1 to F1:6	Only for heating circuits with mixer: Screed drying adjustable in accordance with 6 selectable temperature:time profiles (see page 108).
		F1:15	Constant flow temperature 20 °C (see page 108)
F2:8	Time limit for party mode or external operating program changeover via pushbutton: 8 h <sup>*2</sup>	F2:0	No time limit <sup>*2</sup>
		F2:1 to	Time limit adjustable from 1 to 12 h <sup>*2</sup> .

<sup>\*2</sup> Party mode ends **automatically** in the "Heating and DHW" operating program when the system changes over to operation with standard room temperature.

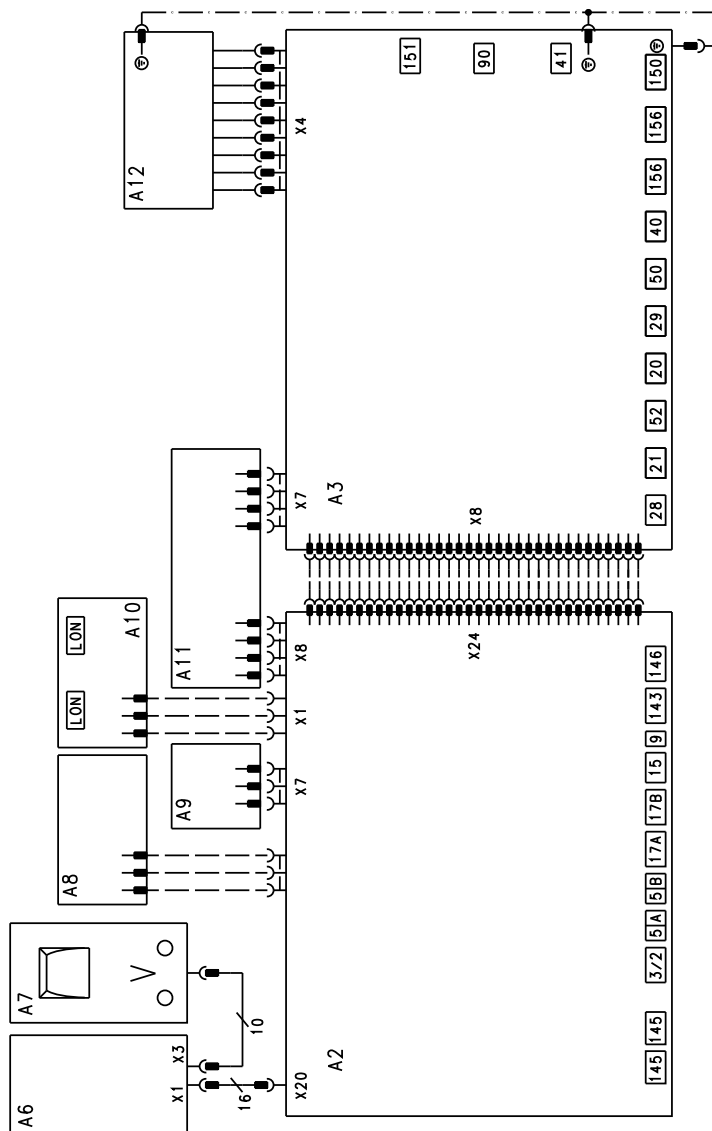


**"Heating circuit ..." group (cont.)**

Coding in the delivered condition		Possible change	
	<b>Note</b> Observe settings of coding addresses "5d", "5E", "5F" in the <b>"General"</b> group, as well as "d5" and "d8" in the <b>"Heating circuit..."</b> group.	F2:12	
F8:-5	Temperature limit for terminating reduced mode -5 °C, see example on page 112. Observe the setting of coding address "A3"	F8:+10 to F8:-60	Temperature limit adjustable from +10 to -60 °C.
		F8:-61	Function disabled
F9:-14	Temperature limit for raising the set reduced room temperature -14 °C, see example on page 112.	F9:+10 to F9:-60	Limit for raising the set room temperature to the value selected for standard mode, adjustable from +10 to -60 °C.
FA:20	Raising the set boiler water or flow temperature by 20 % when changing from operation with reduced room temperature to operation with standard room temperature. See example on page 113.	FA:0 to FA:50	Temperature rise adjustable from 0 to 50 %.
Fb:30	Duration for raising the set boiler water or flow temperature (see coding address "FA") 60 min. See example on page 113.	Fb:0 to Fb:150	Duration adjustable from 0 to 300 min. 1 step $\triangleq$ 2 min

## Connection and wiring diagram

## Overview

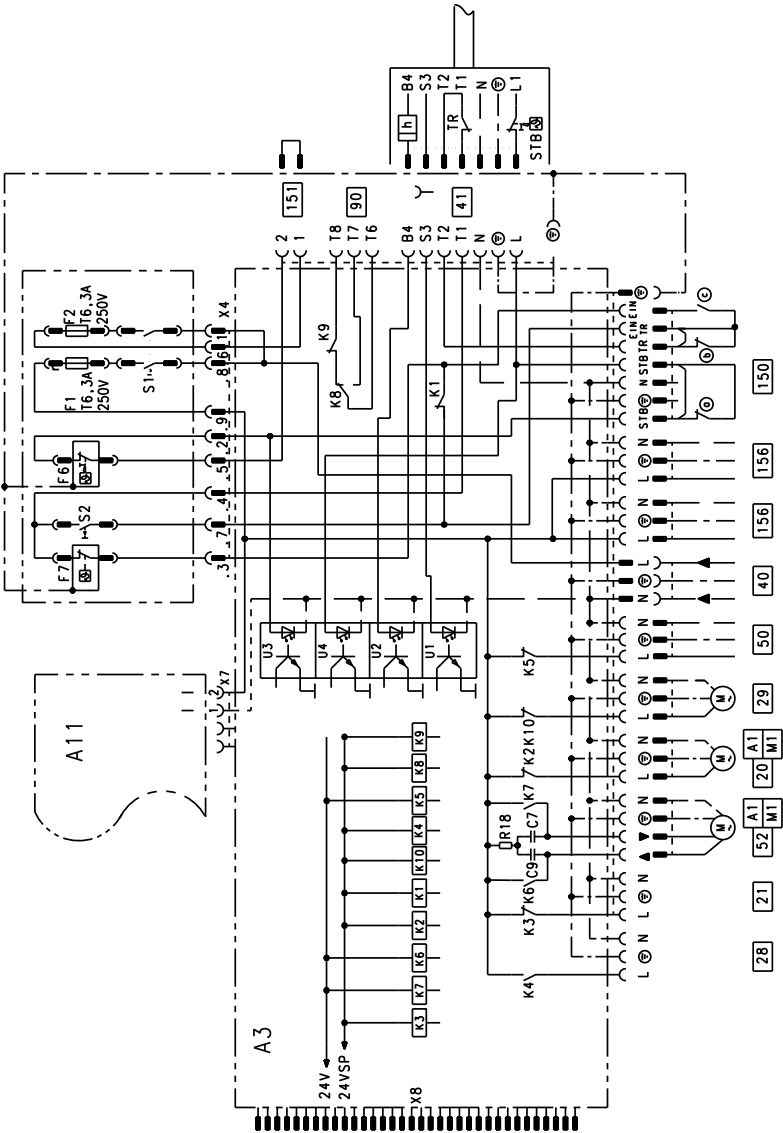


**Connection and wiring diagram (cont.)**

A2	PCB, low voltage	A9	Boiler coding card
A3	PCB 230 V~	A10	LON communication module (accessory)
A6	Programming unit	A11	Power supply unit PCB
A7	Optolink PCB/emissions test switch	A12	Programming unit ON/OFF switch
A8	PCB	X	Electrical interfaces

Connection and wiring diagram (cont.)

PCB 230 V~

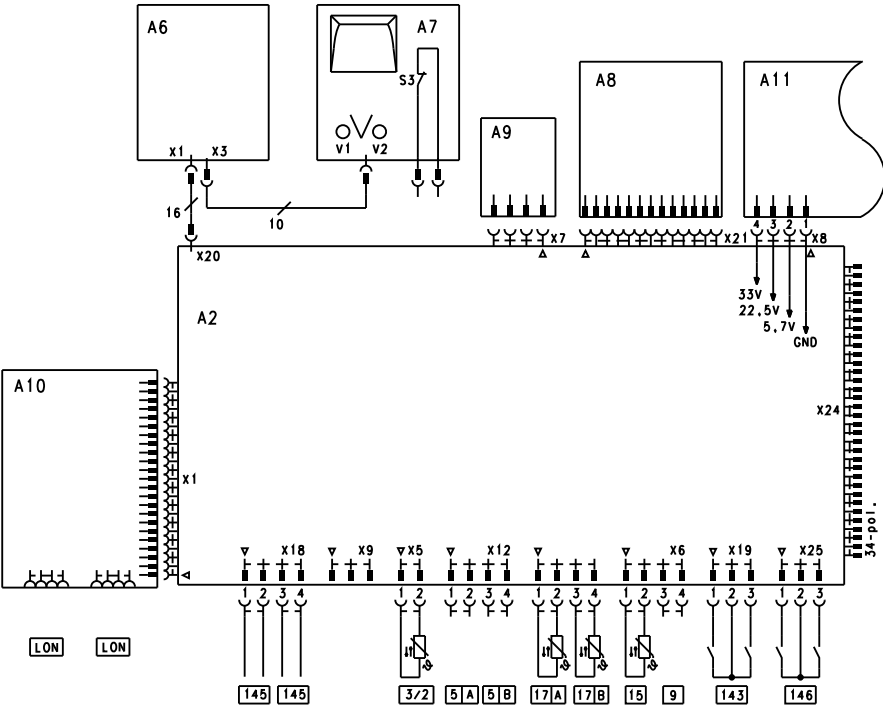


**Connection and wiring diagram (cont.)**

20	Circulation pump, flue gas/ water heat exchanger or Switching output	90	Burner stage 2/modulating
21	Without function	150	External connections (remove jumper when connecting)
28	Without function	a	External safety equipment
29	Shunt pump or boiler circuit pump (on site)	b	External blocking
40	Power supply, 230 V/50 Hz	c	External burner start
41	Oil/gas burners	151	Safety chain (potential-free)
50	Output for central fault mes- sage	156	Power supply for accessories
52	Motorised butterfly valve or Motor, 3-way mixing valve, return temperature control	F1, F2	Fuse/MCB
		F6	High limit safety cut-out 110 °C
		F7	Temperature controller 95 °C
		K1-K10	Relay
		S1	ON/OFF switch
		S2	Test switch
		X	Electrical interfaces

## Connection and wiring diagram (cont.)

### PCB, low voltage

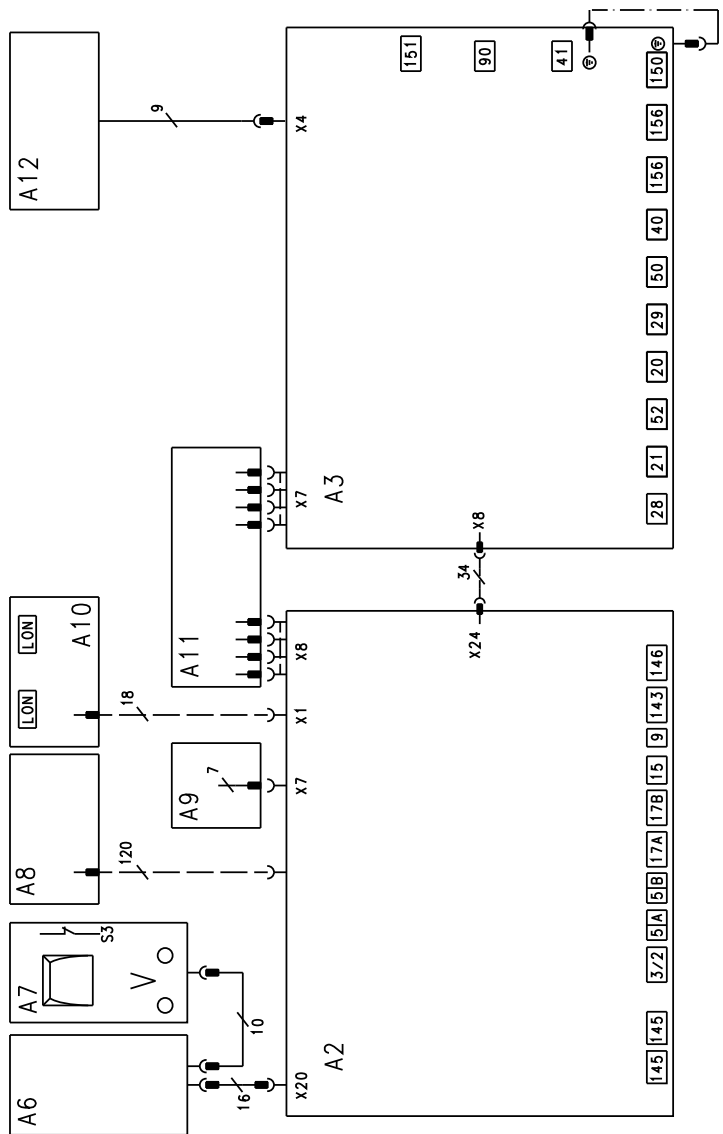


- |      |  |
|------|--|
| 3    | Boiler water temperature sensor                |
| 5 A  | Without function                               |
| 5 B  | Without function                               |
| 9    | Without function                               |
| 15   | Flue gas temperature sensor                    |
| 17 A | Therm-Control temperature sensor               |
|      | or   |
| 17 B | Return temperature sensor T1                   |
|      | Return temperature sensor T2                   |
| 143  | External connections                           |
| 145  | KM BUS subscriber                              |
| 146  | External connections                           |
| LON  | Connecting cable for data exchange (accessory) |

- |    |                          |
|----|--------------------------|
| S3 | Emissions test switch    |
| V1 | Fault indicator (red)    |
| V2 | ON/OFF indicator (green) |
| X  | Electrical interfaces    |

## Connection and wiring diagram

### Overview



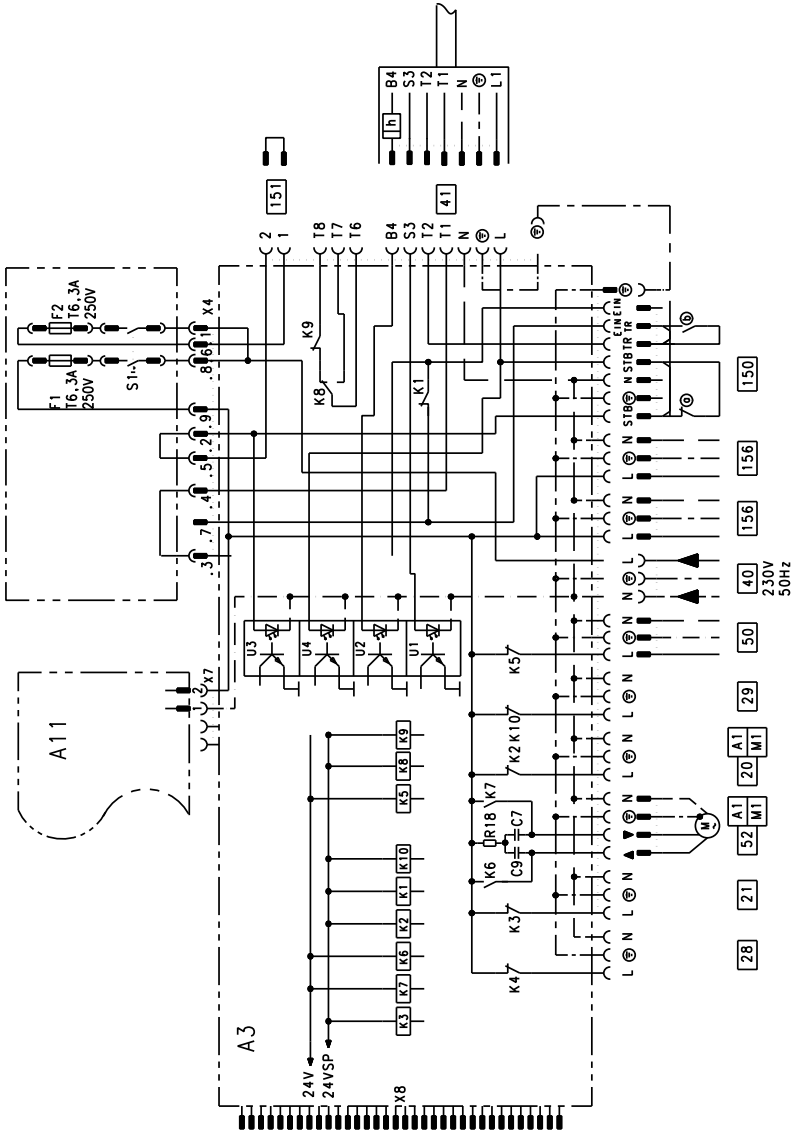
## Connection and wiring diagram (cont.)

A2	PCB, low voltage	A9	Boiler coding card
A3	PCB 230 V~	A10	LON communication module (accessory)
A6	Programming unit	A11	Power supply unit PCB
A7	Optolink PCB/emissions test switch	A12	Boiler control unit
A8	PCB	X	Electrical interfaces



## Connection and wiring diagram (cont.)

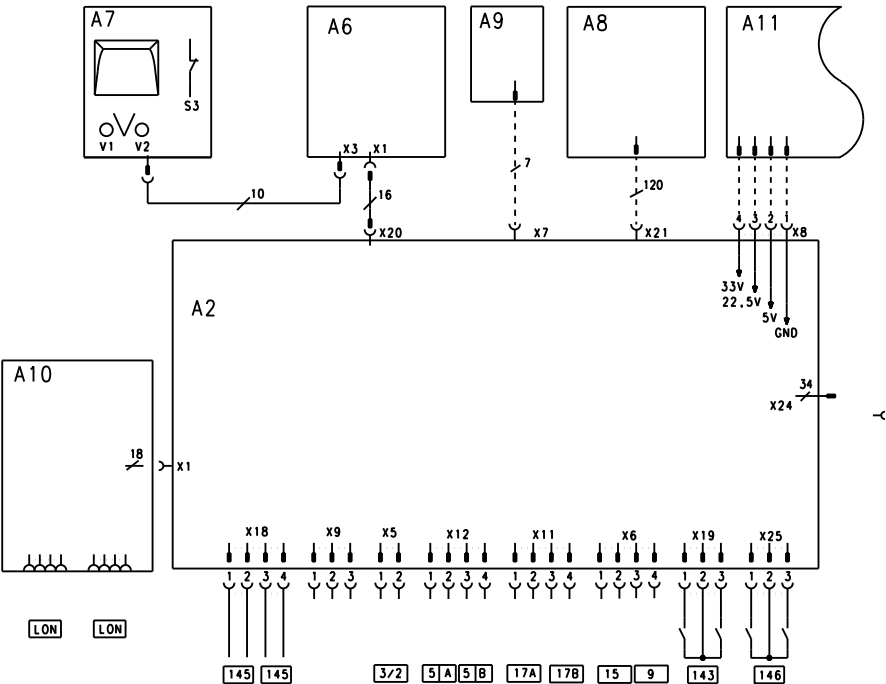
## PCB 230 V~



Connection and wiring diagram (cont.)

20	Without function	151	Safety chain (potential-free)
21	Without function	156	Power supply, from mains filter unit
28	Without function		
29	Boiler circuit pump (on site)	F1, F2	Fuse/MCB
40	Power supply, from mains filter unit, 230 V/50 Hz	K1-K10	Relay
41	Burner	S1	ON/OFF switch
50	Output for central fault message	X	Electrical interfaces
52	Motorised butterfly valve		
150	External connections (remove jumper when connecting)		
	(a) External safety equipment		
	(b) External burner start (base load)		

PCB, low voltage

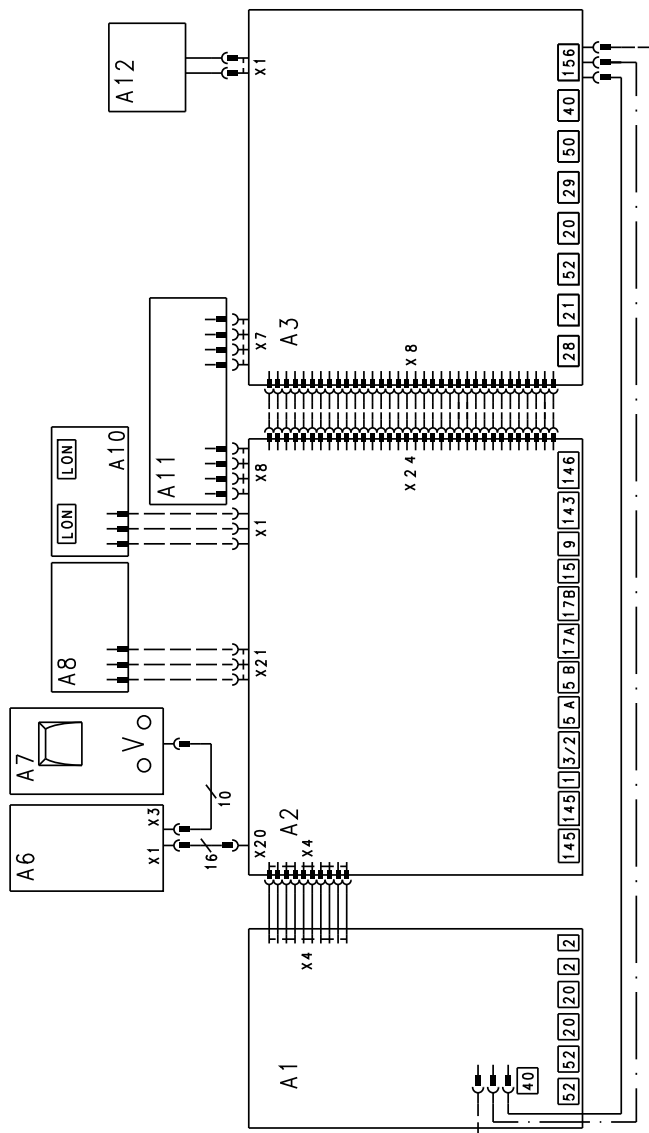


**Connection and wiring diagram (cont.)**

5	A	Without function
5	B	Without function
9		Without function
17	A	Without function
17	B	Without function
143		External connections
145		KM BUS subscriber and KM BUS, burner control unit
146		External connections
LON		Connecting cable for data exchange between control units (accessory)
S3		Emissions test switch
V1		Fault indicator (red)
V2		ON/OFF indicator (green)
X		Electrical interfaces

## Connection and wiring diagram

## Overview

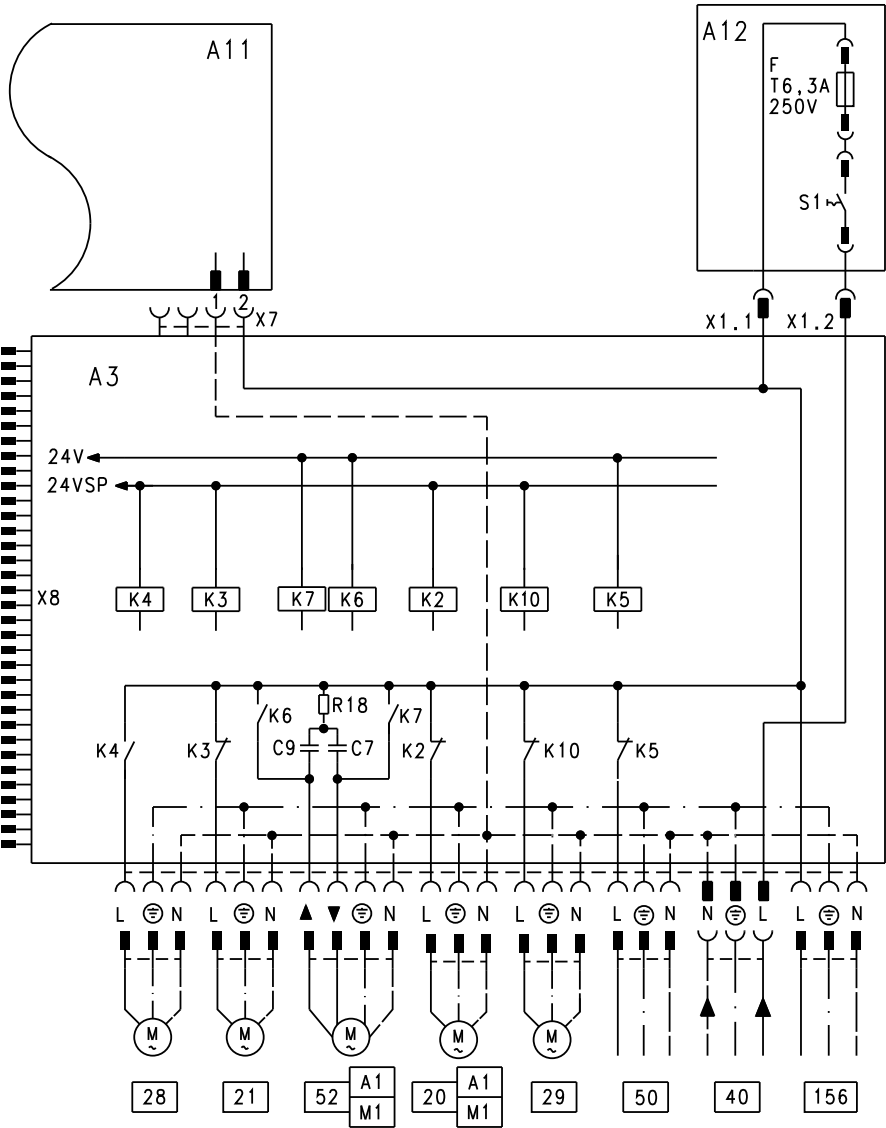


**Connection and wiring diagram (cont.)**

A1	PCB, extension for heating circuits 2 and 3 with mixer	A8	PCB
A2	PCB, low voltage	A10	LON communication module (accessory)
A3	PCB 230 V~	A11	Power supply unit PCB
A6	Programming unit	A12	Programming unit ON/OFF switch
A7	Optolink PCB/emissions test switch	X	Electrical interfaces

Connection and wiring diagram (cont.)

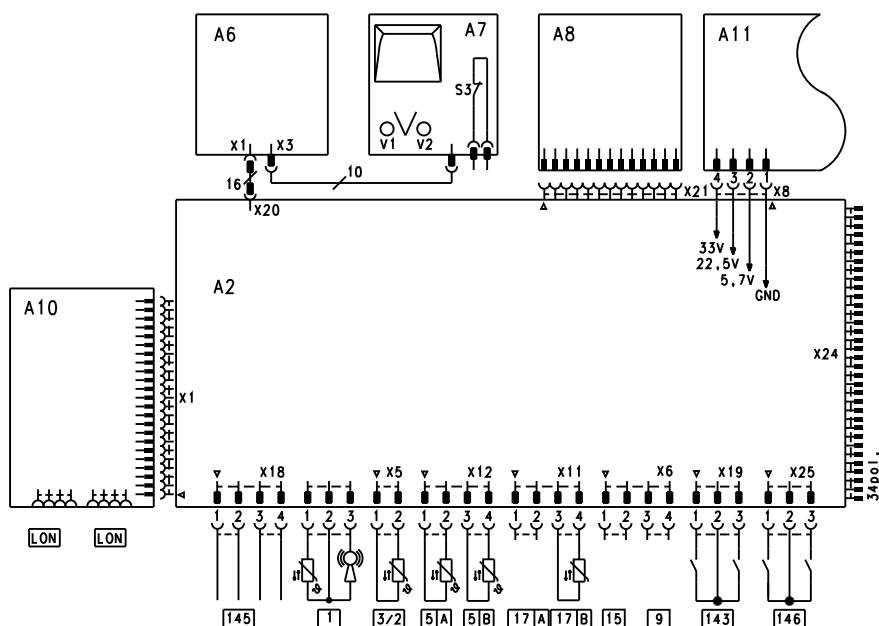
PCB 230 V~



## Connection and wiring diagram (cont.)

20	Heating circuit pump or Primary pump, cylinder loading system	50	Output for central fault message
21	Circulation pump for cylinder heating (accessory)	52	Motor for 3-way mixing valve, cylinder loading system
28	DHW circulation pump (on site)	156	Power supply for accessories
29	Distribution pump (on site)	F	Fuse/MCB
40	Power supply, 230 V/50 Hz	K2-K10	Relay
		S1	ON/OFF switch
		X	Electrical interfaces

### PCB, low voltage

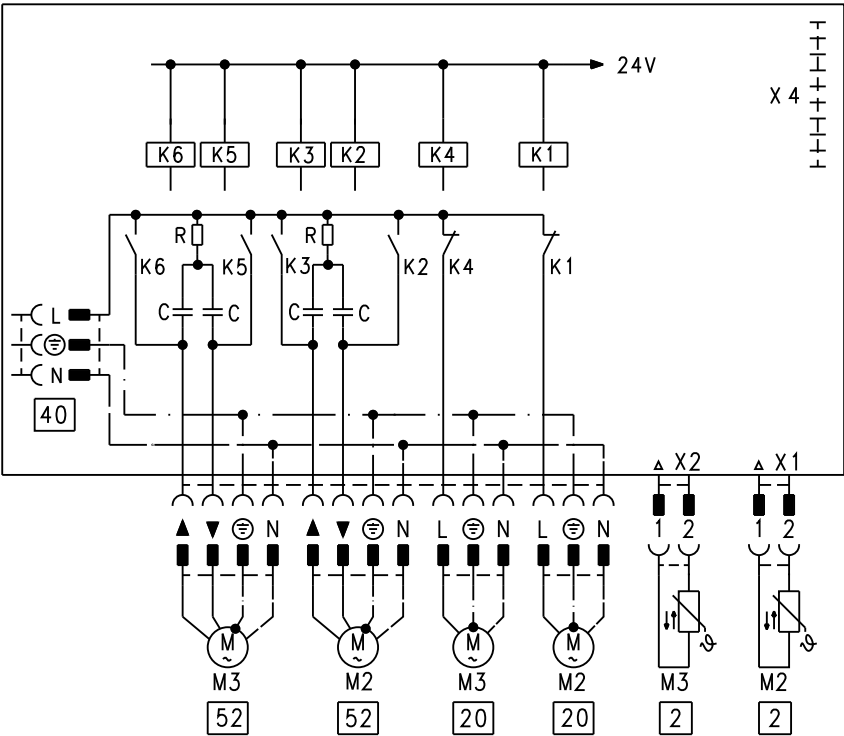


1	Outside temperature sensor/ radio clock receiver	15	Without function
2	Flow temperature sensor (common system flow temperature)	17 A	Without function
5 A	Cylinder temperature sensor	17 B	Temperature sensor cylinder loading system
5 B	Cylinder temperature sensor 2 for cylinder loading system	143	External connections
9	Without function	145	KM BUS subscriber
		146	External connections

**Connection and wiring diagram (cont.)**

LON	Connecting cable for data exchange (accessory)	V1	Fault indicator (red)
S3	Emissions test switch	V2	ON/OFF indicator (green)
		X	Electrical interfaces

**PCB, extension for heating circuits 2 and 3 with mixer**



2	Flow temperature sensors
20	Heating circuit pumps
40	Power supply
52	Mixer motors
K1-K6	Relay
X	Electrical interfaces



## Boiler coding card

Boiler	Boiler coding card		
	Display in brief scan	Identification	Spare part no.
Vitocrossal 300, type CT3	1040	7435 870	7837 015
Vitocrossal 200, type CM2	1041	7435 871	7837 016
Vitocrossal 300, type CR3, CR3B			
Vitocrossal 200, type CT2	1042	7435 872	7837 017
Vitocrossal 300, type CM3			
Vitomax 300-LT	1070	7435 876	7837 021
Vitoplex 200, type SX2A	1001	7435 865	7837 010
Vitoplex 300, type TX3A	1010	7435 866	7837 011
Vitoradial 300-T			
Vitorond 200, type VD2, VD2A	1020	7435 867	7837 012

## Sensors

### Boiler water, cylinder, flow (Therm-Control sensor), return and room temperature sensors

#### Note

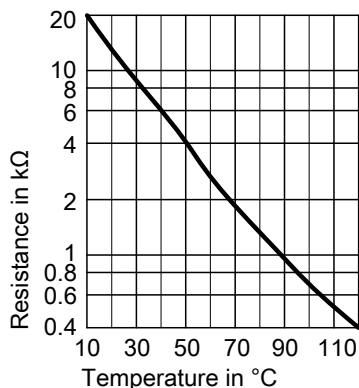
- The flow temperature sensor can be a contact or immersion temperature sensor.
- The flow temperature sensor of the mixer extension kit is a contact temperature sensor.
- The room temperature sensor is connected at terminals 3 and 4 in the Vitotrol 300.



Installation and service instructions Vitotrol 300

## Sensors (cont.)

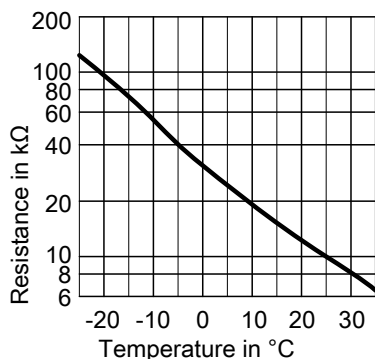
### Viessmann NTC 10 k $\Omega$ (blue ID label)



1. Pull corresponding plug.
2. Check the sensor resistance and compare it with the curve.
3. In the case of severe deviation, check the installation and replace the sensor if required.

### Outside temperature sensor

#### Viessmann NTC 10 k $\Omega$



1. Pull plug 1.
2. Check the sensor resistance across plug terminals "1" and "2" and compare with the curve.
3. If the results are very different from the curve, disconnect the wires from the sensor and repeat the test on the sensor.
4. Depending on the result, replace the lead or the outside temperature sensor.

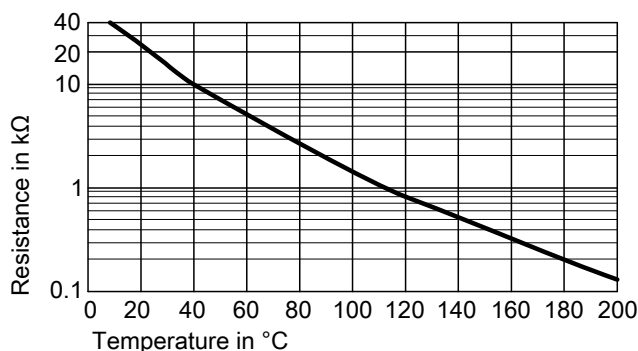
### Flue gas temperature sensor

#### Part no. 7452 531

A service message appears when a limit entered in the Vitotronic 100 is reached (see coding address "1F" in group 2).

## Sensors (cont.)

### Viessmann NTC 20 kΩ (orange ID label)



1. Pull plug 15.
2. Check the sensor resistance and compare it with the curve.
3. In the case of severe deviation, check the installation and replace the sensor if required.

## Plug-in adaptor for external safety equipment

Part no. 7164 404

### Connecting one plug-in adaptor

The plug-in adaptor is automatically recognised by the control unit as a KM BUS subscriber.

**The following external safety equipment can be connected to EN 12828:**

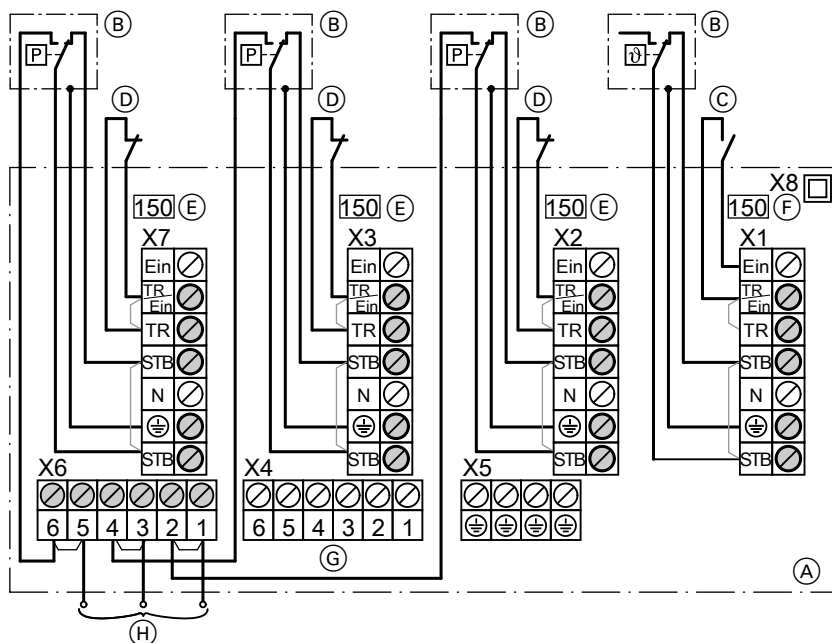
#### Vitotronic 100, type GC1B

- Low water indicator
- Maximum pressure limiter
- Minimum pressure limiter
- Additional high limit safety cut-out
- Controlled external burner shutdown
- External burner demand (stage 1)

#### Vitotronic 100, type GC4B

- Low water indicator
- Maximum pressure limiter
- Minimum pressure limiter
- Additional high limit safety cut-out
- External burner start

## Plug-in adaptor for external safety equipment (cont.)



- Ⓐ Wiring chamber (lower section of the plug-in adaptor)
- Ⓑ External safety equipment
  - X1 Additional high limit safety cut-out or Temperature limiter
  - X2 Minimum or maximum pressure limiter
  - X3 Maximum pressure limiter
  - X7 Low water indicator or Plug 150 of a second plug-in adaptor
- Ⓒ External burner start (stage 1/base load)
- Ⓓ Only for the Vitotronic 100, type GC1B:  
Controlled external shutdown
- Ⓔ Plug 150
- Ⓕ Plug 150 of the control unit
- Ⓖ Connection for cable with plug 150 to the control unit
- Ⓗ To the control panel or to the alarm equipment

**Observe** the **order** of the connections shown in the diagram.

Remove the jumper in plug **150** when connecting the external safety equipment.

## Plug-in adaptor for external safety equipment (cont.)

### Note

A plug **150** **must** be inserted into every socket "X1", "X2", "X3" and "X7".

## Connecting two plug-in adaptors



Separate installation instructions

Make the connections in plug-in adaptor **1** as described in the previous chapter.

In plug-in adaptor **2**, the connections can be made in any order.

### Rotary selector setting

The rotary selector is located in the upper part of the plug-in adaptor.

Delivered condition: Setting 1

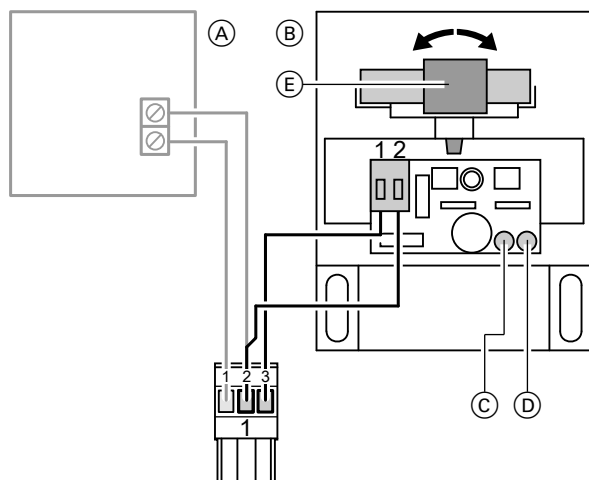
Plug-in adaptor 1: Setting 1

Plug-in adaptor 2: Setting 2

## Radio clock receiver

Part no. 7450 563

The radio clock receiver sets the time at the control unit and any remote control that may be connected, fully automatically.



(A) Outside temperature sensor

(B) Radio clock receiver

## Radio clock receiver (cont.)

- Ⓒ Green LED
- Ⓓ Red LED

- Ⓔ Aerial

### Connection

2-core lead, length max. 35 m with a cross-section of 1.5 mm<sup>2</sup>.

### Check reception

During reception, the green LED on the radio clock receiver flashes.

If the red LED flashes, rotate the aerial until reception is confirmed by the flashing of the green LED.

### Specification

IP rating	IP 43
Permissible ambient temperature during operation, storage and transport	-40 to +70 °C

## Mixer extension kit

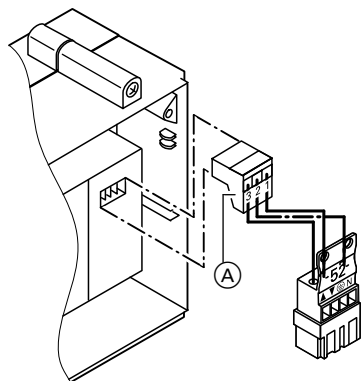
Part no. 7441 998

Components:

- Mixer motor, with 4.0 m connecting cable (not for flanged mixer)
- Plug for connecting the heating circuit pump
- Flow temperature sensor as contact temperature sensor for capturing the flow temperature, with 5.8 m long lead.

## Mixer extension kit (cont.)

### Changing the rotational direction (if required)



1. Pull 3-pole plug (A) from mixer motor, turn 180° and refit.
2. Check the rotational direction.

- ▲ Open mixer
- ▼ Close mixer

### Manual mixer adjustment

Lift the motor lever, unhook the mixer handle and pull plug (A).

### Mixer motor specification

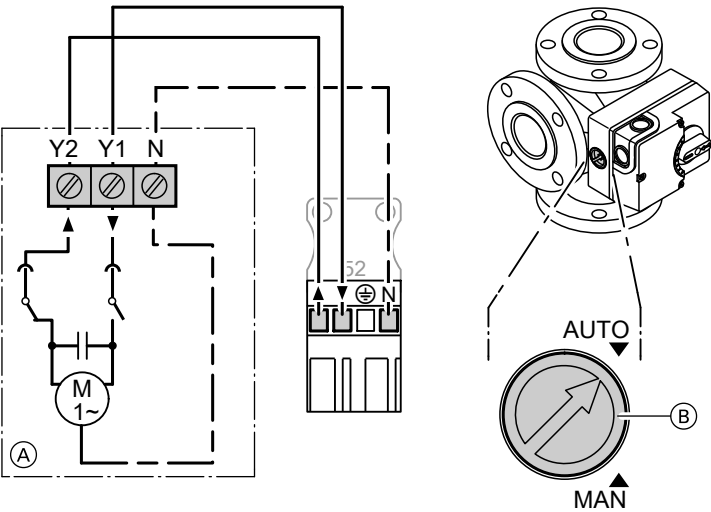
Rated voltage	230 V~
Rated frequency	50 Hz
Power consumption	4 W
Safety category	II
IP rating	IP 42 to EN 60 529; ensure through appropriate design and installation
Permissible ambient temperature	
■ During operation	0 to +40 °C
■ During storage and transport	–20 to +65 °C

## Mixer motor

Part no. 9522 487

**Mixer motor (cont.)**

For heating mixers DN 40 and 50.



- (A) Mixer motor
- (B) Linked switch

- ▲ Open mixer
- ▼ Close mixer

**Changing the rotational direction**

Interchange cores at terminals "Y1" and "Y2".

**Checking the rotational direction**

The control unit relay test moves the mixer to "Open" and "Close".

**Manual mixer adjustment**

Linked switch (B) in "MAN" setting.

**Specification**

Rated voltage	230 V~	Power consumption	3 W
Rated frequency	50 Hz	IP rating	IP 42



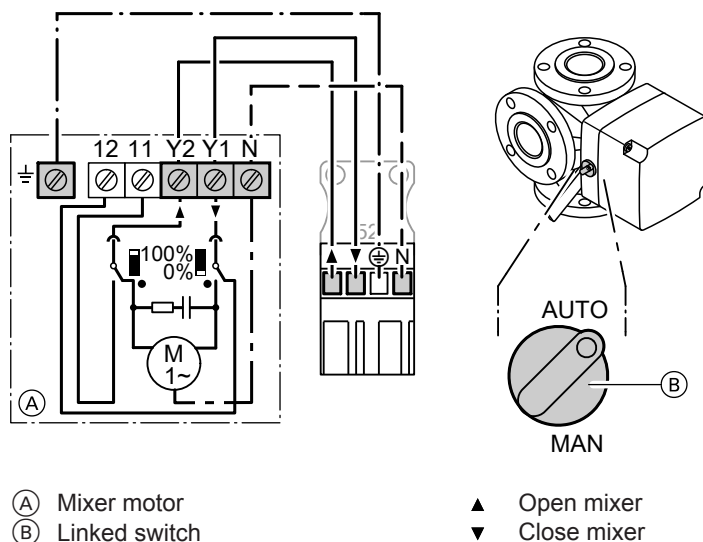
## Mixer motor (cont.)

Torque 5 Nm  
Runtime for 90° < 135 s

## Mixer motor

Part no. Z004 344

For heating mixers DN 65 and 100.



## Changing the rotational direction

Interchange cores at terminals "Y1" and "Y2".

## Checking the rotational direction

The control unit relay test moves the mixer to "Open" and "Close".

**Mixer motor** (cont.)

**Manual mixer adjustment**

Linked switch ③ in "MAN" setting.

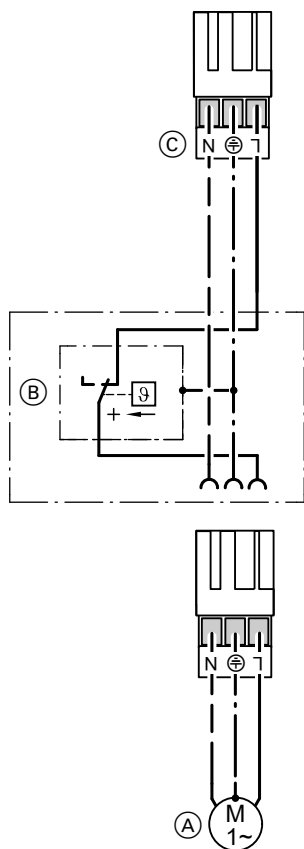
**Specification**

Rated voltage	230 V~	IP rating	IP 42
Rated frequency	50 Hz	Torque	12 Nm
Power consumption	4 W	Runtime for 90° <	125 s

## Temperature limiter for limiting the maximum temperature

Immersion thermostat, part no. 7151 728

Contact thermostat, part no. 7151 729



- (A) Heating circuit pump  
 (B) Temperature controller (temperature limiter)  
 (C) Plug 20 of the temperature controller (temperature limiter) to the control unit

Electromechanical temperature limiter according to the liquid expansion principle.

Switches the heating circuit pump off when the set value has been exceeded. In such cases, the flow temperature reduces only slowly, i.e. it may be several hours before the system restarts again automatically.

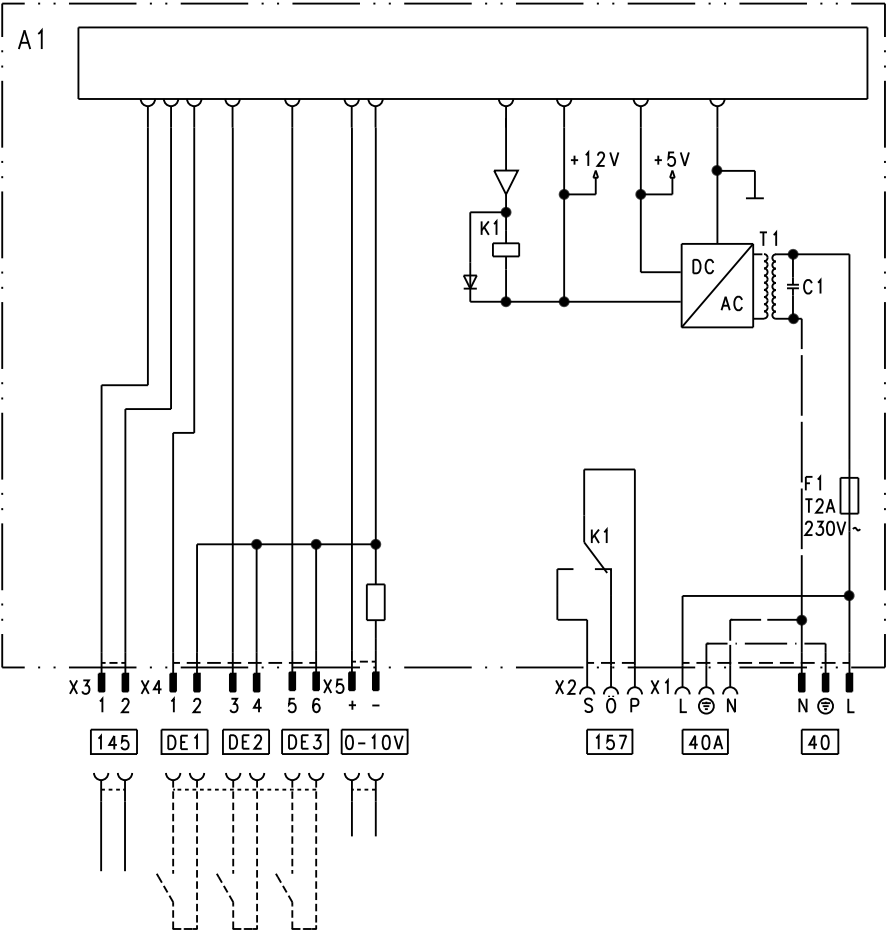
Connection: Screw terminals for 1.5 mm<sup>2</sup>

## Specification

Setting range	30 to 80 °C
Switching differential	
■ Immersion thermostat	max. 11 K
■ Contact thermostat	max. 14 K

EA1 extension

Part no. 7452 091



- DE1 Digital input 1
- DE2 Digital input 2
- DE3 Digital input 3
- 0 – 10 V 0 – 10 V input
- 40 Power supply

- 40 A Power supply for additional accessories
- 157 Switching contact (floating)
- 145 KM BUS

**EA1 extension (cont.)****Digital inputs DE1 to DE3**

Functions:

- External operating program changeover for heating circuits 1 to 3 separately
- External blocking
- External blocking with fault message input
- External demand with minimum flow temperature
- Fault message input
- Brief operation of the DHW circulation pump

When connecting external contacts, observe the requirements of safety category II, i.e. 8.0 mm air-gap and creep paths or maintain a 2.0 mm insulation thickness against 'live' parts.

**Input function assignment**

Select the input functions by means of the following codes in the **"General"** group at the boiler control unit:

- DE1: Coding address "5d"
- DE2: Coding address "5E"
- DE3: Coding address "5F"

**Assigning the operating program changeover function to the heating circuits**

The assignment of the operating program changeover **to the relevant heating circuit** is set at coding address "d8" in the **"Heating circuit..."** group:

- Code "d8:1": Changeover via input DE1
- Code "d8:2": Changeover via input DE2
- Code "d8:3": Changeover via input DE3

Select the effect of the operating program changeover at coding address "d5" in the **"Heating circuit..."** group:

**Duration of the operating program changeover**

- Contact constantly closed:  
The changeover is enabled as long as the contact is closed.
- Contact only closed briefly via pushbutton:  
The changeover is enabled for the time selected in coding address "F2" in the **"Heating circuit..."** group.

**DHW circulation pump runtime for brief operation**

The DHW circulation pump can be started outside the times when it is enabled according to the time program.

The DHW circulation pump is started by closing the contact at DE1, DE2 or DE3 by means of a pushbutton. Set the runtime at coding address "12" in the **"General"** group.

## EA1 extension (cont.)

### Analogue input 0 – 10 V

The 0 – 10 V hook-up provides an additional set flow temperature:

0 – 1 V is seen as "no set flow temperature".

#### **Note**

*Ensure DC separation between the LV output and the earth conductor of the on-site power supply.*

Coding address "1E" in the **"General"** group:

- "1E:0"  $\triangleq$  temperature demand adjustable in the range from 0 to 100 °C  
1 V  $\triangleq$  10 °C set value change  
10 V  $\triangleq$  100 °C set value change
- "1E:1"  $\triangleq$  temperature demand adjustable in the range from 30 to 120 °C  
1 V  $\triangleq$  30 °C set value change  
10 V  $\triangleq$  120 °C set value change

### Output 157

Connection of a central fault messaging facility or signalling reduced mode (reduction of the heating circuit pump speed).

Select the function of output 157 at coding address "5C" in the **"General"** group.

## Parts list Vitotronic 100, type GC1B

### Ordering parts

#### The following information is required:

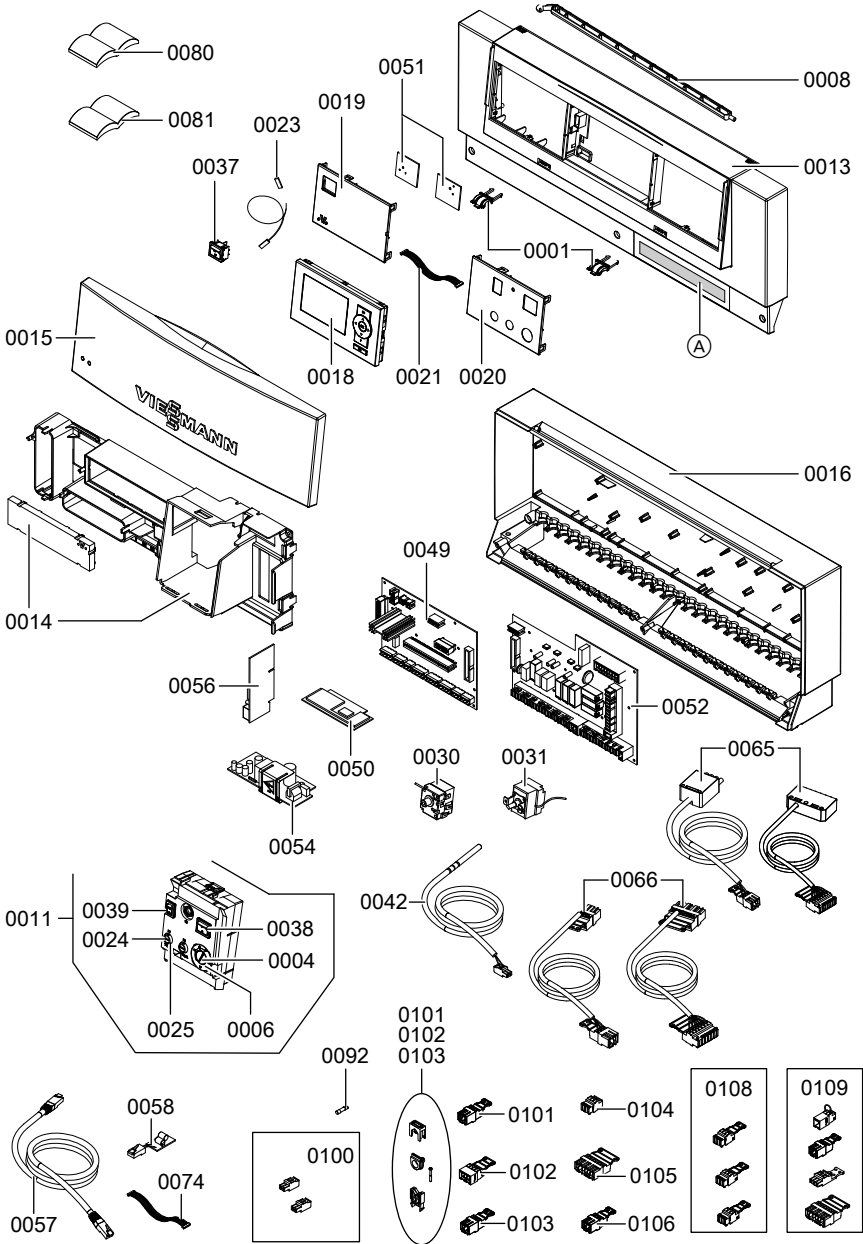
- Serial no. (see type plate (A))
- Position number of the part (from this parts list)

Standard parts are available from your local supplier.

#### Parts

- |  |  |
|--|--|
| 0001 Hinges  | 0049 PCB, low voltage  |
| 0004 Temperature controller rotary selector  | 0050 PCB   |
| 0006 Temperature controller stop dial  | 0051 PCB, Optolink and emissions test switch   |
| 0008 Supporting stay   | 0052 PCB 230 V~  |
| 0011 Safety valve with wiring  | 0054 Power supply unit PCB   |
| 0013 Casing front with frame (with pos. 001)   | 0056 LON communication module  |
| 0014 PCB cover   | 0057 LON cable   |
| 0015 Front flap  | 0058 LON terminator  |
| 0016 Casing, rear section  | 0065 Burner connecting cable with plug [41] and burner connecting cable with plug [90] (for boilers with pressure-jet oil/gas burners) |
| 0018 Programming unit  | 0066 Burner connecting cable with plug [41] and burner connecting cable with plug [90] for Vitocrossal                                 |
| 0019 Fascia, left  | 0074 Connecting cable, 16-pole   |
| 0020 Fascia, right   | 0080 Installation and service instructions   |
| 0021 Ribbon cable, 10-pole   | 0081 Operating instructions  |
| 0023 Connecting cable, emissions test switch   | 0092 MCB/fuse 6.3 A (slow)/250 V~  |
| 0024 Fuse holder cap for control fuse  | 0100 Plug for LV (7 pce)   |
| 0025 Fuse holder for control fuse  | 0101 Plug for pumps (3 pce)  |
| 0030 High limit safety cut-out   | 0102 Plug [52] (3 pce)   |
| 0031 Temperature controller  | 0103 Plug [156] (3 pce)  |
| 0037 Emissions test switch, 1-pole   | 0104 Power plug [40] (3 pce)   |
| 0038 ON/OFF switch, 2-pole   | 0105 Plug [150]  |
| 0039 Test switch, single pole  | 0106 Plug [50] (3 pce)   |
| 0042 Temperature sensor (boiler water temperature sensor or cylinder temperature sensor) | 0108 Plug [143], [145], [146]  |
|  | 0109 Burner plugs [41], [90], [151] and [191]  |
|  | (A) Type plate   |

Parts list Vitotronic 100, type GC1B (cont.)





## Parts list Vitotronic 100, type GC4B

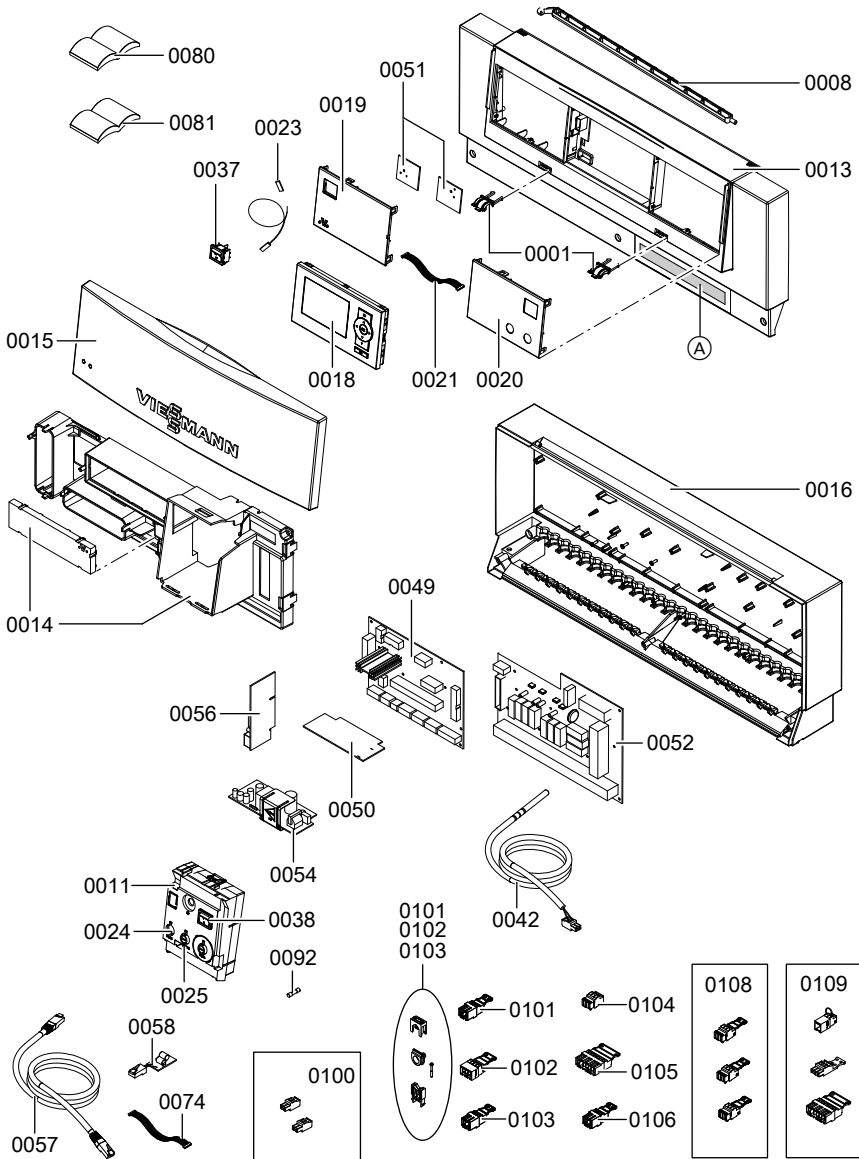
### The following information is required:

- Serial no. (see type plate (A))
- Position number of the part (from this parts list)

### Parts

0001 Hinge	0050 PCB
0008 Supporting stay	0051 Optolink and emissions test switch
0011 Safety valve with wiring	0052 PCB 230 V~
0013 Casing front with frame	0054 Power supply unit PCB
0014 PCB cover	0056 LON communication module
0015 Front flap	0057 LON cable
0016 Casing, rear section	0058 LON terminator
0018 Programming unit	0074 Connecting cable
0019 Fascia, left	0080 Installation and service instructions
0020 Fascia, right	0081 Operating instructions
0021 Ribbon cable, 10-pole	0092 MCB/fuse 6.3 A (slow)/250 V~
0023 Connecting cable, emissions test switch	0100 Plug for LV (7 pce)
0024 Fuse holder cap for control fuse	0101 Plug for pumps (3 pce)
0025 Fuse holder for control fuse	0102 Plug <span style="border: 1px solid black; padding: 0 2px;">52</span> (3 pce)
0037 Emissions test switch, 1-pole	0103 Plug <span style="border: 1px solid black; padding: 0 2px;">156</span> (3 pce)
0038 ON/OFF switch, 2-pole	0104 Power plug <span style="border: 1px solid black; padding: 0 2px;">40</span> (3 pce)
0042 Temperature sensor	0105 Plug <span style="border: 1px solid black; padding: 0 2px;">150</span>
0049 PCB, low voltage	0106 Plug <span style="border: 1px solid black; padding: 0 2px;">50</span> (3 pce)
	0108 Plug <span style="border: 1px solid black; padding: 0 2px;">143</span> , <span style="border: 1px solid black; padding: 0 2px;">145</span> , <span style="border: 1px solid black; padding: 0 2px;">146</span>
	0109 Burner plugs <span style="border: 1px solid black; padding: 0 2px;">41</span> , <span style="border: 1px solid black; padding: 0 2px;">90</span> , <span style="border: 1px solid black; padding: 0 2px;">151</span> and <span style="border: 1px solid black; padding: 0 2px;">191</span>
	(A) Type plate

**Parts list Vitotronic 100, type GC4B (cont.)**



## Troubleshooting Vitotronic 300-K

### Ordering parts

#### The following information is required:

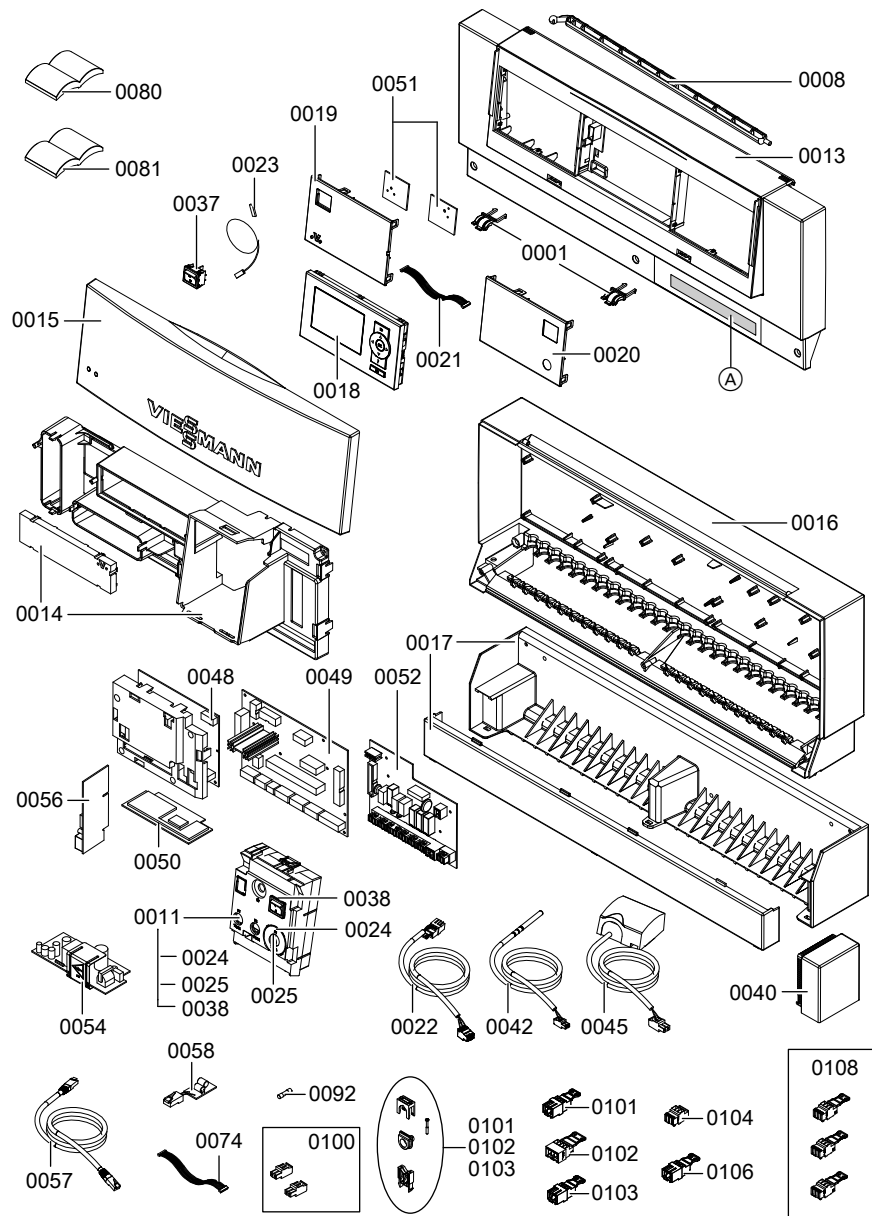
- Serial no. (see type plate (A))
- Position number of the part (from this parts list)

Standard parts are available from your local supplier.

#### Parts

0001 Hinge	0038 ON/OFF switch, 2-pole
0008 Supporting stay	0040 Outside temperature sensor <span style="border: 1px solid black; padding: 0 2px;">1</span>
0011 Safety valve with wiring	0042 Temperature sensor
0013 Casing front with frame	0045 Contact temperature sensor (flow temperature sensor)
0014 PCB cover	0049 PCB, low voltage
0015 Front flap	0048 Extension for heating circuits 2 and 3 with mixer, incl. cover
0016 Casing, rear section	0050 PCB
0017 Mounting bracket	0051 PCBs, Optolink and emissions test switch
0018 Programming unit	0052 PCB 230 V~
0019 Fascia, left	0054 Power supply unit PCB
0020 Fascia, right	0056 LON communication module
0021 Ribbon cable, 10-pole	0057 LON cable
0022 Connecting cable, extension for heating circuits 2 and 3 with mixer	0058 Terminator (2 pce)
0023 Connecting cable, emissions test switch	0074 Connecting cable, 16-pole
0024 Fuse holder cap for control fuse	0080 Installation and service instructions
0025 Fuse holder for control fuse	0081 Operating instructions
0037 Emissions test switch, 1-pole	0092 MCB/fuse 6.3 A (slow)/250 V~
	0100 Plug for LV (7 pce)
	0101 Plug for pumps (3 pce)
	0102 Plug <span style="border: 1px solid black; padding: 0 2px;">52</span> (3 pce)
	0103 Plug <span style="border: 1px solid black; padding: 0 2px;">156</span> (3 pce)
	0104 Power plug <span style="border: 1px solid black; padding: 0 2px;">40</span> (3 pce)
	0106 Plug <span style="border: 1px solid black; padding: 0 2px;">50</span> (3 pce)
	0108 Plug <span style="border: 1px solid black; padding: 0 2px;">143</span> , <span style="border: 1px solid black; padding: 0 2px;">145</span> , <span style="border: 1px solid black; padding: 0 2px;">146</span> (3-pole)

# Troubleshooting Vitotronic 300-K (cont.)



## Boiler control unit Vitotronic 100, type GC1B

Rated voltage	230 V~
Rated frequency	50 Hz
Rated current	2 x 6 A ~
Power consumption	10 W
Safety category	I
IP rating	IP 20 D to EN 60529; ensure through appropriate design and installation
Mode of operation	Type 1 B to EN 60730-1
Permiss. ambient temperature	
■ During operation	0 to +40 °C Installation in living spaces or boiler rooms (standard ambient conditions)
■ During storage and transport	-20 to +65 °C
Rated relay output breaking capacity at 230 V~	
20	Circulation pump, flue gas/water heat exchanger or Switching output
21	Without function
28	Without function
29	Shunt pump or boiler circuit pump
50	Central fault message
52	Motorised butterfly valve or Motor, 3-way mixing valve, return temperature control
41	Burner
90	Burner (two-stage)
90	Burner (modulating)

4 (2) A~\*3

4 (2) A~\*3

4 (2) A~\*3

4 (2) A~\*3

4 (2) A~\*3

0.2 (0.1)~\*3

6 (3) A~

1 (0.5) A~

0.2 (0.1) A~

\*3 Total max. 6 A~

## Boiler control unit Vitotronic 100, type GC4B

Rated voltage	230 V~	
Rated frequency	50 Hz	
Rated current	2 x 6 A ~	
Power consumption	10 W	
Safety category	I	
IP rating	IP 20 D to EN 60529; ensure through appropriate design and installation	
Mode of operation	Type 1B to EN 60730-1	
Permiss. ambient temperature		
■ During operation	0 to +40 °C Installation in living spaces or boiler rooms (standard ambient conditions)	
■ During storage and transport	-20 to +65 °C	
Rated relay output breaking capacity at 230 V~		
20	Without function	4 (2) A~*3
21	Without function	4 (2) A~*3
28	Without function	4 (2) A~*3
29	Boiler circuit pump	4 (2) A~*3
50	Central fault message	4 (2) A~*3
52	Motorised butterfly valve	4 (2) A~*3
41	Burner	6 (3) A~

\*3 Total max. 6 A~

## Specification Vitotronic 300-K

Rated voltage	230 V~
Rated frequency	50 Hz
Rated current	6A~
Power consumption	10 W
Safety category	I
IP rating	IP 20 D to EN 60529; ensure through appropriate design and installation
Mode of operation	Type 1B to EN 60730-1
Permiss. ambient temperature	
■ During operation	0 to +40 °C Installation in living spaces or boiler rooms (standard ambient conditions)
■ During storage and transport	-20 to +65 °C
Rated relay output breaking capacity at 230 V~	
<span>20</span> Heating circuit pump	
or	
Primary pump, cylinder loading system	4 (2) A~*3
<span>21</span> Circulation pump for cylinder heating	4 (2) A~*3
<span>28</span> DHW circulation pump	4 (2) A~*3
<span>29</span> Distribution pump	4 (2) A~*3
<span>50</span> Central fault message	4 (2) A~*3
<span>52</span> Mixer motor, extension kit, mixer	
or	
Motor, 3-way mixing valve, cylinder loading system	0.2 (0.1) A~*3

\*3 Total max. 6 A~

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## Applicability

### Serial No.:

7441810  
7498906

7441811

7498901

7441816

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